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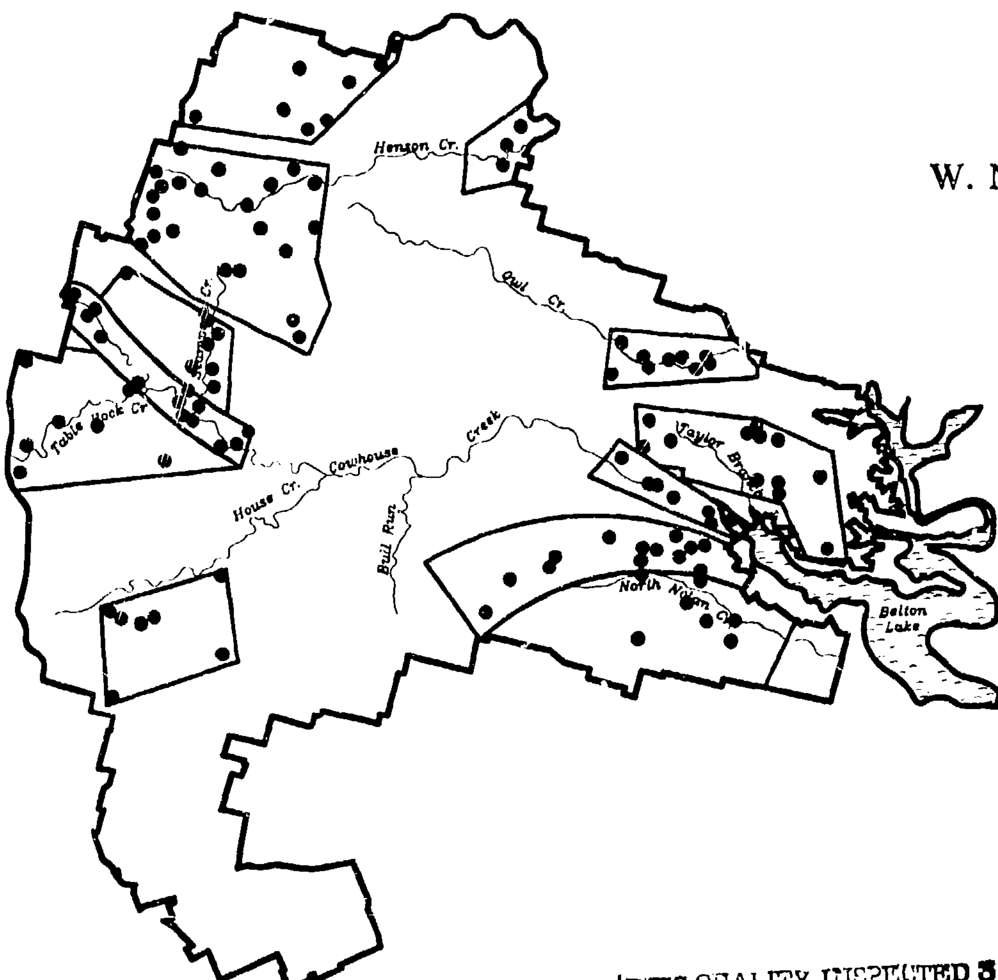
ARCHEOLOGICAL TESTING AT FORT HOOD: 1994-1995

VOLUME II



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UNITED STATES ARMY FORT HOOD
ARCHEOLOGICAL RESOURCE MANAGEMENT SERIES
RESEARCH REPORT NO. 35

1996

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VOLUME II

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RESEARCH REPORT NO. 35

1996

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VOLUME II

Prepared for

Directorate of Public Works
Environmental Management Office
Fort Hood, Texas

by

TRC MARIAH ASSOCIATES INC.
Austin, Texas

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7.0 ARTIFACT ANALYSES

Marybeth S. F. Tomka

7.1 TECHNOLOGICAL AND SPATIAL ANALYSIS OF NAMED CHERT VARIETIES

In our first testing report (Abbott and Trierweiler 1995), we presented a discussion of chert utilization from a spatial perspective relative to the nine site groupings we had defined at that time. We followed this with an initial attempt to provide a theoretical framework for viewing the movement of cherts across the prehistoric landscape at Fort Hood. This section attempts to combine both the spatial movement and technological role of chert for 110 of 119 sites which contained lithic material. Resource procurement at the scale of the Fort Hood installation requires that we abandon the idea of direct procurement of lithic resources in favor of more cost-effective embedded strategy (Binford 1979). Within an embedded strategy, resources are:

> ...normally obtained incidentally to the execution of basic subsistence tasks. The procurement strategy was embedded within some other strategy and, therefore, the cost of procurement was not referable to the distance between the source location and the location of use, since the distance would have been traveled anyway (Binford 1979:259-260).

Binford's logic is dependent on his Nunamuit ethnoarcheological research where he found that traditional groups combine activities because their logic tells them that to do otherwise could be more costly. This research led Binford to conclude that "*very rarely, and then only when things have gone wrong, does one go out into the environment for the express and exclusive purpose of obtaining raw material for tools*" (1979:259) (emphasis in original).

Goodyear (1989:5) appears to agree with Binford's assessment in stating that his research indicates human movement of chert 200 to 400 miles from the source. He cites evidence presented by Hester and Grady (1977:92) that "90 to 120 miles would be a reasonable radius for a band territory" and thus, resource movement. Moreover, modern hunters and gatherers, although under different environmental constraints, are highly mobile and appear to rely on the movement of people to gain access to needed resources (cf. Yellen 1977; Yellen and Harpending 1972).

Understanding resource procurement may be dependent on our definition of mobility. Two settlement patterns may have been practiced by the prehistoric inhabitants of Fort Hood. One case of mobility is a semi-sedentary group and the other a true wandering band. Mobility in the former is defined as the movement of a small group or groups of people in search of resources while the majority of the residents stay at the main camp (Spiess and Wilson 1989:97), while in the latter the whole band travels from one resource area to another.

It has been stated (Abbott and Tomka 1995) that the dominating presence of Southeast Range materials in all assemblages proves that the cultural cost of procurement was not high enough to preclude their usage. In reality, procurement costs would be minimal if one accepts Binford's logic. We are then looking at the issue from the wrong perspective or maybe at the incorrect issue. Are explanations lacking because we are troubled by the fact that the aboriginals were using material other than what is considered prime material by modern knappers, or are we forgetting the issue that the aboriginals were highly mobile and viewed resources differently than ourselves, and that the presence of the Southeast Range is an expression of this fact?

In the Fort Hood case, the best estimate is that the inhabitants of the region were engaging in forays within which the collection of lithic raw materials was embedded. The most logical assumption would be that this foraging trip was subsistence related. But of further interest is the form in which the raw material was brought back to camp. The testing of this hypothesis as presented below involved the integration of an analysis designed to determine type of debitage (core versus biface) and stage of manufacture represented by the debitage. These data allow an interpretation to be drawn as to the form in which "nonlocal" lithic sources were being brought to the site, (i.e., partially or completely decortified). "Nonlocal" resources would apply to chert provinces that are neither adjacent to nor within a site group (i.e., Southeast Range materials would be "nonlocal" for the Turkey Run site group on the western edge of the Fort).

In order to better understand the mechanics of lithic procurement, the debitage from the 12 site groupings was examined using the chert province of origin as the primary division. In a recent study, Hines, Tomka, and Kibler (1994), found that the cross-tabulations of selected attributes, that is, the ones most indicative of staged biface manufacture, give insight into the form in which raw material arrived at their discard sites. For Wind Canyon (Hines, Tomka, and Kibler 1994), raw materials were being imported from a variety of locations and were utilized for differing functions; a situation similar to Fort Hood. Utilizing experimental data of lithic reduction for multidirectional core, nodule/biface, flake/biface, and a composite assemblage (Tomka and Fields 1990), and archeological data (Fields et al. 1990), the debitage was examined for seven distinguishing characteristics: (1) the overall percentage of debitage smaller than 0.9 cm in size, (2) the percentage of these small debitage which are decorticate, (3) the overall percentage of debitage larger than 1.8 cm, (4) the percentage of these large debitage which are decorticate, (5) the percentage of decorticate debitage by chert province, (6) the percentage of debitage between 0.9 and 1.8 cm in size, and (7) the percentage of decorticate debitage by site group.

The Fort Hood size categories are based on Dickens and Dockall's (1993) mass debitage analysis that trades in depth technological analysis for a limited number of attributes. Dickens and Dockall (1993) utilized a sieve set to measure maximum debitage dimensions in the Texas A&M work at Fort Hood (Table 7.1), and we modified this method for our testing efforts. The size categories have been correlated with a standard breakdown used in the experimental work and the analysis of sites. The choice of attributes follows what has been demonstrated in experimental work and its comparison to archeological assemblages (Hines, Tomka, and Kibler 1994; Tomka and Fields 1990) to hold true (Table 7.2). The first conclusion of similarity is supported by the chert sourcing research. The second is supported by the discussion of projectile and non-projectile point tools (see Section 7.2).

The following discussions present a brief overview of the basic data for each of the 12 site groups. Within each section we discuss the specifics of debitage, and if present, non-projectile point tools, projectile points, and cores. General trends in the preferred chert province for each of the 12 groups, and any outstanding contributions by individual chert types or combinations of chert types are

Table 7.1 Comparison of Size Attributes of Fort Hood to those of Other Analysts.

Dickens and Dockall (1993)	TRC Mariah	Other Research
< 7 mm	less than 0.5 cm	0-10 mm
7-13 mm	0.5-0.9 cm	1-10 mm
7-13 mm	0.9-1.2 cm	11-20 mm
13-17 mm	1.2-1.8 cm	11-20 mm
17-26 mm	1.8-2.6 cm	21-30 mm
26-54 mm	2.6-5.2 cm	31-40 mm & 40-50 mm
26-54 mm	2.6-5.2 cm	31-40 mm & 40-50 mm
>54 mm	greater than 5.2 cm	51+ mm

Table 7.2 Comparison of Experimental Data to Archeological Data.

	Decorticate	<0.9 cm	0.9-1.8 cm	>1.8 cm
Experimental Data				
Composite	62%	6%	57%	35%
Multidirectional Core	54%	1%	52%	46%
Nodule/Biface	60%	5%	59%	36%
Flake/Biface	74%	12%	63%	26%
Archeological Data				
Jewett Mine 41LN29A & 106	75%	16%	64%	20%

All data derived from Tomka and Fields 1990:222.

addressed. Following this, the discussions address general trends and technological characteristics inferred from the limited data recovered (e.g., size and/or reduction stage of material imported to the site(s), and usage preferences by site grouping). The debitage data will be compared to core, non-point, and projectile point data as appropriate. The discussion for each of the 12 site groups is supplemented by three data tables presented in Appendix G. For each site group, these present: (1) lithic frequency by class (core, tool, etc.) and chert raw material, grouped by chert source province; (2) lithic frequency by site and chert raw material, grouped by chert source province; and (3) percentage of lithic decortication by size class and raw material. Throughout the discussion the term decorticate is used in referring to materials that are free of cortex. Likewise, decortification rate refers to the percentage of cortex-free materials. The reader should also note that debitage is used rather than flake(s) because of its more general connotations. The accepted primary, secondary, and tertiary flake terms are not used since the analysis did not use these classifications of flakes. Tertiary is occasionally used to refer to cortex-free debitage.

The discussions will proceed from the eastern site groupings to the western ones. It must be remembered that tool presence does not imply on-site manufacture. Rather debitage and their technological characteristics are the better gauges of what happened at a site, taphonomy and preservation issues notwithstanding. However, before preceding, I need to state a few cautions.

First, not all of the site groups or chert types have sufficient numbers of specimens to make conclusions or reliable interpretations. Second, the chert typology is still evolving and large areas of Fort Hood have not been looked at in sufficient detail to rule them out as potential chert sources. Additionally, there are several analogs among the 28 named chert types. The most obvious analog group includes Cowhouse Mottled, Heiner Lake Tan, Fort Hood Yellow, and Table Rock Flat. All four of these named types can contribute to the Indeterminate Light Brown category. Moreover, since large areas of the base have not be studied, we still do not fully understand the geologic strata from which the cherts are outcropping. It may be that the analogs are merely variations on the same basic source materials. Frederick et al. (1994) found that, based on chemical testing of the most well known and prevalent cherts at Fort Hood, Heiner Lake Tan and Fort Hood Yellow have overlaps, suggesting that the other types may have similar chemical overlaps. Furthermore, the importance of the Lithic Resource Procurement Areas (LRPAs) as primary sources for raw materials has not been fully addressed. Additionally, we do not understand how the chert province concept relates to specific LRPAs which have cherts currently believed to be from different areas of the Fort.

Third, we presume that many of the unidentified debitage specimens are probably named types which simply can not be identified due to their small size. However, we do not fully understand why some tools cannot be chert typed although they are not small in size.

Finally, although we recorded the presence of abrasion, we did not use these data in analysis due to inconsistent use by the laboratory analyst. Moreover, the kinds of data we collected during our testing phase analyses do not lend themselves easily to the identification of reduction strategies with reliable results. However, we feel the data are probably sufficient for low-level interpretations, and furthermore are suggestive of other new avenues of research.

7.1.1 East Groups

7.1.1.1 Nolan South Site Group

A total of 8,408 specimens of identified chert were recovered from this site group, representing about 33% of all lithics recovered from the seven sites in this group. Of the identified specimens, 8,080 are classified as debitage (96%), 22 as cores (.3%), 25 as projectile points (3%), and 281 as non-point tools (3%) (Appendix G, Table 1). Heiner Lake Translucent Brown is the dominating chert type of the total assemblage (51%), with Heiner Lake Tan (30%) as a distant second. As will be seen in the following sections, most of the site groups show a remarkable consistency in the relative proportions of these two materials (although proportions vary widely between individual sites). In only two cases (sites 41BL208 and 41BL850) the ratios are reversed; however, the relationship is strongly reversed at site 41BL208 (Appendix G, Table 2).

Of the grand total of 24,358 debitage specimens, 90% of the total cherts are decorticate and 94% of the 8,080 identified cherts are decorticate (Appendix G, Table 3). This percentage is much higher than the norm for experimental biface manufacture that ranges from 60 to 74% tertiary flakes (see Hines, Tomka, and Kibler 1994:64; Tomka and Fields 1990:222) and is the highest among all 12 site groups. Overall the percentage of debitage smaller than 0.9 cm is quite high (34%) as compared to experimental bifacing (Tomka and Fields 1990:222) with a decortification rate approaching 100%. However, the amounts of specimens smaller than 0.9 cm are skewed by the high numbers of Southeast Range and West Fort materials. The decortification rate and the number of small specimens are indicators of the final stages of biface and projectile point manufacture of North Fort and Southeast Range materials. These small specimens and the high tertiary nature of them also attest to the importation of flake-blanks.

These conclusions can be supported by viewing the breakdown of the individual chert types within the tool assemblages. Heiner Lake Blue, Heiner Lake Tan, Heiner Lake Translucent Brown, and Owl Creek Black have the highest rates of debitage smaller than 0.9 cm and the highest corresponding rates of decortification. To a lesser degree, Fossiliferous Pale Brown, Fort Hood Yellow, and Gray/Brown/Green follow the same pattern. In general, the Southeast Range and North Fort materials have the highest rates of overall decortification. This is a function of the small bifacial tools and projectile points manufactured and probably the resharpening of the tools. This is borne out by the tool data. With the exception of the modified edge tools, the staged bifaces are the most prominent category (17% of all tools) with a high amount of projectile points (14% of all tools). The Southeast Range materials are the predominant materials and Heiner Lake Tan is the primary material for projectile points.

Although Heiner Lake Translucent Brown is the prevalent material identified in the debitage, among projectile points Heiner Lake Tan dominates, and non-point tools made of Heiner Lake Tan also are more plentiful than Heiner Lake Translucent

Brown tools. In fact, tools made from Heiner Lake Tan are only 10% lower in frequency than all the indeterminate chert types combined. Moreover, the percentage drops to only a four point difference for projectile points indicating a very strong preference for the material and its use as projectile points. As would be expected, the flake tools are predominantly of the cherts found in high numbers in the debitage.

In summary, Southeast Range materials make up 95% of the total cherts identified, with Heiner Lake Tan and Heiner Lake Translucent Brown the most preferred materials. The binomial test resulted in Heiner Lake Blue, Heiner Lake Tan, and Heiner Lake Translucent Brown occurring in higher than expected amounts, while all others occurred at less than expected frequencies. These conclusions come as no surprise, since the Nolan/South site group is in the "heartland" of the Southeast Range chert province and the North Fort province is the next closest.

7.1.1.2 Nolan/Cowhouse Site Group

A total of 2,093 specimens of identified chert were recovered from this site group, which is about 18% of the total lithic materials. Of these, 1,994 are classified as debitage (95%), three as cores (0.1%), 16 as projectile points (0.8%), and 80 as non-point tools (4.0%) (Appendix G, Table 4). Heiner Lake Tan is the most prevalent chert type of the total assemblage (32%), with Heiner Lake Translucent Brown (30%) a close second. This is the same relationship as seen in the Nolan South site group, but with a more balanced distribution between the two materials. Of the sites that vary from this relationship, Heiner Lake Blue or Fossiliferous Pale Brown make up the difference for the decreased amount. In two cases Heiner Lake Blue occurs in a higher percentage than either Heiner Lake Tan or Heiner Lake Translucent Brown (41BL743 and 41BL751) (Appendix G, Table 5). An additional two sites have Fossiliferous Pale Brown occurring in higher amounts (41BL773 and 41BL888).

Of the grand total of 10,807 debitage specimens, 87% of the total cherts are decorticate and 88% of the identified cherts are decorticate (Appendix G, Table 6). This percentage is higher than average for experimental biface manufacture that ranges from 60% to 74% tertiary flakes and is among the highest of the site groups. Overall, the percentage of debitage smaller than 0.9 cm is quite high (46%) as compared to experimental bifacing (Tomka and Fields 1990:222) with a decortification rate of 96%. However, the amounts of specimens smaller than 0.9 cm is a factor of the high percentages of identified materials in this category, while the decortification rate is a function of the final stages of biface manufacture. These small specimens and the high tertiary nature of them attest to the importation of flake-blanks.

These interpretations can be supported by viewing the breakdown of the individual chert types within the tool assemblages. Heiner Lake Blue, Heiner Lake Tan, Heiner Lake Translucent Brown, and Owl Creek Black have the highest rates of debitage smaller than 0.9 cm size and the highest corresponding rates of decortification. To a lesser degree, Anderson Mountain Gray, Fossiliferous Pale Brown, East Range Flecked, and Gray/Brown/Green follow the same pattern. Only the Cowhouse materials have high rates of large-sized materials and low rates of overall decortification that are a result of the manufacture of large-sized end-products (i.e., formal scrapers, crushing/battering tools) that normally have more cortex. Separately the Cowhouse chert types are not represented in sufficient frequencies to see patterns. In this case, however, the assemblage does not have any large-sized tools of Cowhouse materials.

Heiner Lake Translucent Brown, Fossiliferous Pale Brown, Heiner Lake Blue, and Heiner Lake Tan are the prevalent materials identified in the debitage; projectile points and tools are dominated by Heiner Lake Tan. Heiner Lake Blue is the second chert type of preference for projectile points, although no other chert types come close to the numbers of Heiner Lake Tan tools.

In summary, Southeast Range materials make up 88% of the total cherts identified, with Heiner Lake Tan, Heiner Lake Translucent Brown, Heiner Lake Blue, and Fossiliferous Pale Brown the most preferred materials. The binomial test resulted in Heiner Lake Blue, Anderson Mountain Gray, Heiner Lake Tan, Fossiliferous Pale Brown, and Heiner Lake Tan, and Cowhouse Mottled with Flecks occurring in higher than expected amounts, while all others occurred in less than expected amounts. Once again these conclusions are not surprising given the spatial placement of this site group within the Southeast Range chert province and in close proximity to the North Fort province.

7.1.1.3 East Cowhouse Site Group

A total of 307 specimens of identified chert where recovered from this site group, comprising approximately 18% of the total lithic materials. Of these 278 are classified as debitage (91%), four as cores (1%), one as a projectile point (0.3%), and 24 as non-point tools (8.0%) (Appendix G, Table 7). Heiner Lake Translucent Brown is the most prevalent chert type of the total assemblage (25%), with Heiner Lake Tan a close second (22%) (Appendix G, Table 8). Most sites in this group show Heiner Lake Blue or Fossiliferous Pale Brown make up the difference. Of note is the significant decrease in the contributions made by the Southeast Range materials when compared to the Cowhouse bedload materials. Southeast Range materials drop from 95% in Nolan South to 63% in the East Cowhouse site group.

Of the grand total of 873 debitage specimens, 78% are decorticate, whereas of the 278 identified cherts 81% are decorticate (Appendix G, Table 9). This percentage is slightly higher than the norm for experimental biface manufacture that ranges from 60% to 74% tertiary flakes. Overall the percentage of debitage smaller than 0.9 cm is low (7%) as compared to experimental biface reduction (Tomka and Fields 1990:222) and compares more favorably with a composite sample of core and biface reduction. However, the decortification rate is high, indicating that although the sample is of mixed technology, the small debitage are probably still the product of bifacing. Core technology is not very prevalent at the fort and this particular site group has a below average number of cores; however, the low numbers do not rule out core technology since the debitage characteristics point in that direction. The number of specimens between 0.9 and 1.8 cm in size is a further indicator of the mixture of biface and core reduction.

The Southeast Range, North Fort, and West Fort materials have the highest rates of overall decortification, causing the average to be higher than expected. This is a function of the small bifacial tools that were being manufactured. The small tool assemblage (n=46) does not lend itself to support or refute this conclusion.

These interpretations can be supported by viewing the breakdown of the individual chert types within the tool assemblages. Heiner Lake Blue, Heiner Lake Tan, and Owl Creek Black have the highest rates of debitage less than 0.9 cm in size and the highest corresponding rates of decortification. To a lesser degree, Heiner Lake Translucent Brown, Fossiliferous Pale Brown, Fort Hood Yellow, and Gray/Brown/Green follow the same pattern.

There is only one projectile point in this site group assemblage, made of Heiner Lake Tan. Heiner Lake Translucent Brown and Heiner Lake Tan are the prevalent materials identified in the non-point tools, with Cowhouse Mottled contributing four tools.

In summary, Southeast Range materials make up 63% of the total cherts identified, with Heiner Lake Tan and Heiner Lake Translucent Brown the most preferred materials. The binomial test resulted in Heiner Lake Tan and Heiner Lake Translucent Brown occurring in higher than expected frequencies and Cowhouse Shell Hash, Cowhouse Mottled with Flecks, and Cowhouse Mottled and Banded occurring in less than expected amounts, with all others occurring at expected rates. These conclusions are not unexpected, nor is the increased presence of Cowhouse materials given the spatial placement of this site group along the Cowhouse drainage yet still very close to the Southeast Range and North Fort chert provinces.

7.1.1.4 Cowhouse/Taylor/Bear Site Group

A total of 400 specimens of identified chert were recovered from this site group, comprising approximately 13% of the total lithic materials. Of these 370 are classified as debitage (92%), two as cores (0.4%), seven as projectile points (2%), and 21 as non-point tools (5%) (Appendix G, Table 10). Heiner Lake Tan is the most prevalent chert type of the total assemblage (24%). Unlike the previous site groupings, the North Fort cherts play significant roles. Fort Hood Yellow and Owl Creek Black contribute almost 20% each to the total sample. Although these three chert types are roughly even in total numbers, the relative debitage quantities indicate a more varied pattern with each chert type more prominent at one site or another and some sites where each material is represented evenly (Appendix G, Table 11). Overall, the Southeast Range materials have dropped from 95% of the cherts to under 50% of the total cherts identified, with Heiner Lake Tan and North Fort cherts Fort Hood Yellow and Owl Creek Black being the most preferred materials.

Of the grand total of 3,079 debitage specimens, 89% are decorticate; of the 370 identified cherts, 79% are decorticate (Appendix G, Table 12). The tertiary percentage is slightly higher than the norm for experimental biface manufacture that ranges from 60% to 74% tertiary flakes and is typical among the site groups. Overall the percentage of debitage smaller than 0.9 cm is as expected (14%) comparing well to flake-blank experimental bifacing and an archeological assemblage (Tomka and Fields 1990:222) with a decortification rate of 90%.

However, the total number of debitage smaller than 0.9 cm of Southeast Range, North Fort, and West Fort materials is somewhat tempered by the higher rate of small debitage among the unidentified cherts. The decortification rate is very high, attesting to the reduction of bifaces and the importation of flake-blanks. This conclusion is supported by the high number of projectile points and respectable number of other bifacial tools recovered (39% and 18%, respectively).

These interpretations can be supported by viewing the breakdown of the individual chert types within the tool assemblages. Heiner Lake Tan, Fort Hood Yellow, and Owl Creek Black have the highest rates of debitage smaller than 0.9 cm in size, and the highest corresponding rates of decortification. To a lesser degree, Heiner Lake Blue and Gray/Brown/Green follow the same pattern.

Heiner Lake Tan is still the preferred material for all tools and, together with Fort Hood Yellow, dominates the projectile points. Other than the utilized flake category, late stage bifaces are the most abundant tool type present. Looking at the indeterminate category, light brown projectile points and non-point tools are the dominating material type. As stated before, this chert type could be either Fort Hood Yellow or Heiner Lake Tan, if not a few other identified chert types without the characteristics that now define the chert type.

Although, Heiner Lake Tan is the most prevalent material in the total assemblage, North Fort cherts represent 50% of the assemblage and Southeast Range 44%. The binomial test resulted in Heiner Lake Blue, Heiner Lake Tan, Fort Hood Yellow, Heiner Lake Translucent Brown, Gray/Brown/Green, and Owl Creek Black occurring in higher than expected frequency, Cowhouse White occurring in expected frequency and all others occurring at less than expected frequencies. This is not unexpected nor is the variety of Cowhouse bedload materials present given the spatial placement of this site group within the Cowhouse drainage and strategically located between the North Fort and Southeast Range chert provinces.

7.1.1.5 Owl Creek Site Group

A total of 9,708 specimens of identified chert were recovered from this site group, which is approximately 46% of the total lithic materials. Of these, 9,326 are classified as debitage (96%), 13 as cores (0.1%), 42 as projectile points (0.4%), and 327 as non-point tools (3%) (Appendix G, Table 13). Gray/Brown/Green chert is the most prevalent type of the total assemblage (38%). Building on what was seen in the distribution of chert types in the Cowhouse/Taylor/Bear group, the North Fort cherts, and especially Gray/Brown/Green, play a major role in raw material selection. Although Gray/Brown/Green dominates the overall assemblage, the relative debitage quantities of Fort Hood Yellow and Heiner Lake Tan indicate a more varied pattern with each chert type prevalent at different sites (Appendix G, Table 14). Overall, the Southeast Range materials drops to a mere 6% of the total cherts identified, with North Fort chert Gray/Brown/Green dominating and Fort Hood Yellow having a secondary role.

Of the grand total of 20,597 debitage specimens, 87% are decorticate. An identical pattern is seen in the 9,326 identified cherts where 86% are decorticate (Appendix G, Table 15). This percentage is slightly higher than the norm for experimental biface manufacture that ranges from 60% to 74% tertiary flakes and is above average for the site groups. Overall the percentage of debitage smaller than 0.9 cm is very high (40%) compared to experimental bifacing (Tomka and Fields 1990:222) with a decortification rate of 96%. However, the specimens smaller than 0.9 cm is a factor in the high numbers of North Fort, West Fort, and unidentified materials, and is tempered by the decreased numbers of Southeast Range materials. The decortification rate and the number of small specimens is a function of the final stages of biface and projectile point manufacture and attest to the importation of flake-blanks. As we have shown previously (Abbott and Tomka 1995:681; Figure 8.1), the probability of chert type identification is highly correlated with debitage size. The North Fort and unidentified materials have the highest rates of overall decortification. This is a function of the small bifacial tools that were being manufactured and probably the resharpening of the tools. Inferences about the nature of the tool assemblage interpreted from debitage is supported by the tools themselves. Large numbers of projectile points (n=72) are made from unidentified (n=30) and North Fort materials (n=25). Although Owl Creek Black chert is the predominate material for projectile points among the North Fort cherts, almost 50% of all the North Fort chert tools are Gray/Brown/Green. The majority of these Gray/Brown/Green tools are finished and late stage bifaces.

These interpretations can be supported by viewing the breakdown of the individual chert types within the tool assemblages. Heiner Lake Tan, Fort Hood Yellow, Gray/Brown/Green, and Owl Creek Black have the highest rates of debitage less than 0.9 cm in size and the highest corresponding rates of decortification. To a lesser degree, Fort Hood Gray follows the same pattern. Gray/Brown/Green and Owl Creek Black are the dominating chert types, replacing Heiner Lake Tan. Although Gray/Brown/Green and Fort Hood Yellow are the material of choice for non-point tools, Heiner Lake Tan is the preferred material for projectile points. Again, indeterminate light brown tools are prevalent and may represent non-diagnostic specimens of Fort Hood Yellow or Heiner Lake Tan or even Gray/Brown/Green. The binomial test resulted in Heiner Lake Tan, Fort Hood Yellow, Gray/Brown/Green, and Owl Creek Black occurring at higher than expected amounts and all others at less than expected frequency.

7.1.1.6 Summary of Eastern Groups

The overall chert utilization pattern for Bell County and the eastern portion of Coryell County shows high amounts of Southeast Range materials with moderate amounts of North Fort (Table 7.3). The only exceptions to this pattern are in the Owl Creek site group where North Fort chert dominates with two types: Gray/Brown/Green and Owl Creek Black. Within the Cowhouse/Taylor/Bear

Table 7.3 Summary of Key Characteristics of Lithic Debitage by Chert Province and Eastern Site Group.

Site Group	Debitage Category	Southeast Range		North Fort		West Fort		Cowhouse		Identified total		Unidentifed		Total	
North Nolan South	% <0.9 cm	2715	35%	41	23%	25	36%	2	2%	2783	34%	8507	52%	11290	52%
	% <0.9 cm, decorticate	2700	99%	39	95%	21	84%	2	100%	2762	99%	8028	94%	10790	96%
	% >1.8 cm	1533	20%	56	31%	14	20%	48	48%	1651	20%	1611	10%	3262	10%
	% >1.8 cm, decorticate	1241	81%	51	93%	13	93%	32	67%	1337	81%	1150	71%	2487	76%
	% 0.9-1.8 cm	3482	45%	84	47%	31	44%	49	49%	3646	45%	6160	38%	9806	38%
	% of decorticate	7262	94%	166	92%	58	83%	82	83%	7568	94%	14375	88%	21943	88%
	Subtotal	*7730*		*181*		*70*		*99*		*8080*		*16278*		*24358*	
North Nolan Cowhouse	% <0.9 cm	349	20%	14	16%	18	13%	0	0%	381	19%	4585	52%	4966	46%
	% <0.9 cm, decorticate	348	100%	13	93%	17	94%	0	0%	378	99%	4386	96%	4764	96%
	% >1.8 cm	503	29%	26	31%	38	28%	11	73%	578	29%	837	10%	1415	13%
	% >1.8 cm, decorticate	352	70%	17	65%	25	66%	3	27%	397	69%	507	61%	904	64%
	% 0.9-1.8 cm	906	52%	45	53%	78	58%	4	27%	1033	52%	3387	38%	4420	41%
	% of decorticate	1554	88%	70	82%	114	85%	6	40%	1744	87%	7667	87%	9411	87%
	Subtotal	*1758*		*85*		*134*		*15*		*1992*		*8809*		*10801*	
East Cowhouse	% <0.9 cm	12	7%	4	5%	0	36%	0	0%	20	7%	144	46%	164	33%
	% <0.9 cm, decorticate	12	100%	4	100%	0	75%	0	0%	19	95%	138	51%	157	54%
	% >1.8 cm	80	46%	32	43%	1	0%	16	94%	129	46%	159	8%	288	33%
	% >1.8 cm, decorticate	55	69%	23	72%	1	0%	5	31%	83	64%	107	67%	190	66%
	% 0.9-1.8 cm	83	47%	39	52%	10	64%	1	6%	130	7%	292	44%	422	4%
	% of decorticate	148	85%	62	83%	9	82%	6	35%	225	11%	457	77%	682	6%
	Subtotal	*175*		*75*		*11*		*17*		*279*		*595*		*874*	
Cowhouse/Taylor/Bear	% <0.9 cm	11	7%	36	19%	1	10%	2	50%	50	14%	1384	48%	1434	47%
	% <0.9 cm, decorticate	11	100%	31	86%	1	100%	2	100%	45	90%	1309	95%	1354	94%
	% >1.8 cm	70	43%	47	24%	6	60%	1	25%	124	34%	227	6%	351	11%
	% >1.8 cm, decorticate	56	80%	31	66%	5	83%	0	0%	92	74%	157	41%	249	71%
	% 0.9-1.8 cm	81	50%	111	57%	3	30%	1	25%	196	53%	1098	90%	1294	42%
	% of decorticate	129	80%	152	78%	9	90%	3	75%	293	79%	2435	0%	2728	89%
	Subtotal	*162*		*194*		*10*		*4*		*370*		*2709*		*3079*	
Owl Creek	% <0.9 cm	148	23%	3570	41%	4	57%	24	41%	3746	40%	6438	57%	10184	49%
	% <0.9 cm, decorticate	146	99%	3439	96%	0	0%	24	100%	3609	96%	6112	95%	9721	95%
	% >1.8 cm	190	30%	1130	13%	2	29%	30	52%	1352	14%	645	6%	1997	10%
	% >1.8 cm, decorticate	90	47%	683	60%	0	0%	11	37%	784	58%	357	55%	1141	57%
	% 0.9-1.8 cm	302	47%	3921	45%	1	14%	4	7%	4228	45%	4187	37%	8415	41%
	% of decorticate	493	77%	7506	87%	0	0%	37	64%	8036	86%	9856	87%	17892	87%
	Subtotal	*640*		*8621*		*7*		*58*		*9326*		*11270*		*20596*	

site group, Gray/Brown/Green occurs in higher numbers than in the other groups. Assuming that Gray/Brown/Green, Fort Hood Yellow, Owl Creek Black, and Heiner Lake Tan are the most easily knapped materials (Frederick and Ringstaff 1994:159-181), it is not surprising to see the material preference switch as one moves north and west. However, this does not explain the preference for projectile points made of Heiner Lake Tan, regardless of their spatial distance from the chert source. The only probable explanation is another source of Heiner Lake Tan in the central to western portions of the Fort.

High amounts of indeterminate light brown chert specimens are found in all site groups. Debitage of this type is believed to be mostly of small size that inhibits recognition as identified types. However, the presence of light brown tools, both projectile points and non-points, can not be explained except by the occurrence of either another type that is as yet undefined or the presence of Heiner Lake Tan, Fort Hood Yellow, or Gray/Brown/Green chert examples that do not have the identifying characteristics.

7.1.2 West Groups

7.1.2.1 East Henson Site Group

A total of 454 specimens of identified chert were recovered from this site group, comprising approximately 59% of the total lithic materials. Of these, 436 are classified as debitage (96%), two as cores (0.4%), six as projectile points (1%), and 10 as non-point chert tools (2%) (Appendix G, Table 16). Fort Hood Yellow at 55% of the total assemblage almost six times more abundant than the total of specimens from Southeast Range. The quantities of Fort Hood Gray and Gray/Brown/Green chert in the total assemblage both exceed those of Heiner Lake Tan by 3% and 11%, respectively. These patterns vary by site. With one exception, Fort Hood Yellow chert is the most prevalent type at the site-level. In the exception Gray/Brown/Green has twice as many specimens as Fort Hood Yellow (Appendix G, Table 17). Of note is that the miscellaneous category has the highest number of indeterminate debitage. This may suggest a legitimate but as yet unnamed chert source.

Of the grand total of 746 debitage specimens, 73% are decorticate; of the 436 identified cherts 73% are also decorticate (Appendix G, Table 18). This percentage compares well with the average for experimental biface manufacture which ranges from 60% to 74% tertiary flakes, and is the lowest among all 12 site groups. Overall, the percentage of debitage smaller than 0.9 cm is quite low (2%) and is highly comparable to experimental reduction of multidirectional cores (Tomka and Fields 1990:222) with a decortification rate of 100%. There are no cores, however, from this site group making the interpretation of chert reduction strategies solely dependent on the resulting debitage. Moreover, the number of specimens smaller than 0.9 cm is skewed by the numbers of North Fort and unidentified materials; the decortification rate and the number of small specimens could be a function of multidirectional core reduction that left exhausted cores. These small specimens and the high tertiary nature of them also attest to the importation of flake-blanks that were more like traditionally-defined cores in morphology than biface cores. This is especially true of materials that outcrop in amorphous shapes and sizes. The North Fort and unidentified materials have the highest rates of overall decortification.

These interpretations can be supported by viewing the breakdown of the individual chert types within the tool assemblages. Fort Hood Gray has the highest rate of debitage smaller than 0.9 cm and the highest corresponding rate of decortification.

Heiner Lake Tan and Gray/Brown/Green share the same amount of projectile points, while Fort Hood Yellow and Gray/Brown/Green have two more and one more non-point tools, respectively, than Heiner Lake Tan. The binomial test resulted in Fort Hood Yellow and Gray/Brown/Green occurring in higher than expected amounts, Heiner Lake Tan and Fort Hood Gray in expected amounts, and all others occurring in l[illegible]han expected frequency.

7.1.2.2 Shoal/Turnover Site Group

A total of 2,340 specimens of identified chert were recovered from this site group. This is approximately 43% of the total lithic materials from this group. Of these, 2,295 are classified as debitage (98%), four as cores (0.1%), 10 as projectile points (0.4%), and 31 as non-point chert tools (1%) (Appendix G, Table 19). Fort Hood Yellow is the strong chert preference, and has 15 times the total of Southeast Range materials at 83%. The quantities of Gray/Brown/Green chert in the total assemblage exceed those of Heiner Lake Tan by two percentage points.

The above patterns vary by site. In most site-level assemblages, Fort Hood Yellow chert is the most prevalent with either Heiner Lake Tan or Gray/Brown/Green as a secondary contributor (Appendix G, Table 20). Of note is that the highest number of indeterminate debitage is the light brown category; these could easily be unidentified specimens of Fort Hood Yellow, Gray/Brown/Green, or Heiner Lake Tan.

Of the grand total of 5,359 debitage specimens, 73% are decorticate; of the 2,295 identified cherts, 73% are also decorticate (Appendix G, Table 21). This percentage is in keeping with the norm for experimental biface manufacture which ranges from 60% to 74% tertiary flakes, and is the lowest among all 12 site groups. Overall, the percentage of debitage smaller than 0.9 cm (13%) is highly comparable to experimental biface production of flake-blanks (Tomka and Fields 1990:222) with a decortification rate approaching 100%. However, the amounts of specimens smaller than 0.9 cm is a factor of the high numbers of North Fort and unidentified materials. The decortification rate and the number of small specimens is a function of the final stages of biface and projectile point manufacture. These small specimens and the high tertiary nature of them also attest to the importation of flake-blanks.

These interpretations can be supported by viewing the breakdown of the individual chert types within the tool assemblages. Fort Hood Yellow and Owl Creek Black have the highest rates of debitage smaller than 0.9 cm and the highest corresponding rates of decortification. To a lesser degree, Heiner Lake Tan follows the same pattern.

As previously stated, North Fort materials have the highest rates of overall decortification. This is a function of the small bifacial tools manufactured and probably also of tool resharpening. Heiner Lake Tan and Fort Hood Yellow share the same amount of projectile points, with nearly equal numbers of tools from these materials. Gray/Brown/Green chert makes a contribution to tools with five specimens. The binomial test resulted in Fort Hood Yellow occurring in higher than expected amounts, Gray/Brown/Green in expected amounts, and all others occurring in less than expected amounts.

7.1.2.3 Shell Mountain Site Group

A total of 5,562 specimens of identified chert were recovered from this site group, approximately 19% of the total lithic materials. Of these 5,231 are classified as debitage (94%), 11 as cores (.1%), 79 as projectile points (1%), and 241 as non-point chert tools (4%) (Appendix G, Table 22). The chert preference has shifted to Fort Hood Yellow having a stronger representation than the total Southeast Range materials. Fort Hood Yellow is the most abundant type of the total assemblage (47%), the debitage assemblage (49%) and from its chert province (72%, n=2,590), while Heiner Lake Tan is represented in the total assemblage at 19%, the debitage assemblage at 18%, and the chert province at 74%.

The above patterns vary by site with the easier distinctions made with the larger samples of debitage. In most site-level assemblages Fort Hood Yellow chert is the most prevalent with differing chert types as the secondary contributor, but conforming to the general pattern of Owl Creek Black, Gray/Brown/Green, or Heiner Lake Tan (Appendix G, Table 23). Of note is that the highest number of indeterminate debitage is the light brown category which could easily be unidentified specimens of all but Owl Creek Black.

Of the grand total of 22,555 debitage specimens, 88% are decorticate, whereas of the 5,231 identified cherts 90% are decorticate (Appendix G, Table 24). This percentage is much higher than average for experimental biface manufacture and is among the highest of the site groups. Overall the percentage of debitage smaller than 0.9 cm is quite high (32%) as compared to experimental bifacing (Tomka and Fields 1990:222) with a decortification rate approaching 100%. However, the amounts of specimens less than 0.9 cm is a factor of the high numbers of all but Southeast Range materials; while the decortification rate is high among all the chert provinces and the unidentified materials. The number of small specimens is a function of the final stages of biface and projectile point manufacture, and both the number of small specimens and the high tertiary nature of them attest to the importation of flake-blanks.

The West Fort and North Fort materials have the highest rates of overall decortification. This is a function of the small bifacial tools manufactured and probably the resharpening of these tools. These interpretations can be supported by viewing the breakdown of the individual chert types within the tool assemblages. Fort Hood Yellow, East Range Flat, East Range Flecked, and Owl Creek Black have the highest rates of debitage smaller than 0.9 cm and the highest corresponding rates of decortification. To a lesser degree Heiner Lake Blue, Cowhouse White, Anderson Mountain Gray, Heiner Lake Tan, Cowhouse Mottled, Cowhouse Dark Gray, and Cowhouse Mottled with Flecks follow the same pattern.

Heiner Lake Tan retains its dominance as the chert of preference for projectile points, with about half as many points made from Fort Hood Yellow, and with lesser amounts of Owl Creek Black, Fort Hood Gray and Gray/Brown/Green. Forty-six percent of all the chert tools are made from Heiner Lake Tan, another 12% are Fort Hood Yellow, while far less quantities are made from Cowhouse Mottled, Cowhouse Mottled with Flecks, Gray/Brown/Green, and Owl Creek Black. The binomial test resulted in Heiner Lake Tan, Fort Hood Yellow, Gray/Brown/Green, and Owl Creek Black occurring in higher than expected amounts and all others occurring in less than expected amounts.

7.1.2.4 Stampede Site Group

A total of 160 specimens of identified chert were recovered from this site group, comprising only about 19% of the total lithic materials. Of these, 143 are classified as debitage (89%), eight as projectile points (5%), and nine as non-point tools (6%) (Appendix G, Table 25). In this site group, the chert preference has shifted to Fort Hood Yellow which has a stronger representation than the total Southeast Range materials. Fort Hood Yellow is the most abundant type of the total assemblage (37%), while Heiner Lake Tan is represented in the total assemblage at 19%. The Cowhouse bedload cherts are 11% of the total assemblage; this is partly due to the high rate of North Fort materials and to the respective amounts of Southeast Range materials. Cowhouse Mottled with Flecks is the most abundant of the bedload materials. The above patterns vary by site. In most site-level assemblages Fort Hood Yellow chert is the most prevalent, with Heiner Lake Tan being a very strong secondary contributor (Appendix G, Table 26).

Of the grand total of 807 debitage specimens, 86% are decorticate; of the 143 identified cherts, 84% are decorticate (Appendix G, Table 27). These percentages are slightly higher than typical for experimental biface manufacture and are among the highest of all site groups. Overall, the percentage of debitage smaller than 0.9 cm is quite high (33%) as compared to experimental biface reduction (Tomka and Fields 1990:222) with a decortification rate of 95%. However, the amounts of specimens less than 0.9 cm in size is a factor of the high numbers of unidentified materials, since only the North Fort materials even had debitage in this category. The decortification rate is a function of the average of these null provinces and the high numbers of tertiary specimens among the unidentified and North Fort cherts. However, the number of small specimens is a function of the final stages of biface and projectile point manufacture. These small specimens and the high tertiary nature of them also attest to the importation of flake-blanks.

The Southeast Range and North Fort materials have the next highest rates of overall decortification after the unidentified cherts. This is a function of the small bifacial tools that were being manufactured and probably the resharpening of the tools. These conclusions can be supported by comparing the individual chert types that are considered preferred materials to the tool assemblages. Owl Creek Black and Fort Hood Yellow have the highest rates of debitage smaller than 0.9 cm and the highest corresponding rates of decortification.

Heiner Lake Tan retains its dominance as the chert of preference for projectile points, while Cowhouse White (a Southeast Range material) is second only to North Fort province's Fort Hood Gray chert in tool representation. The highest number of indeterminate debitage is the light brown category which could easily be either Fort Hood Yellow or Heiner Lake Tan materials. The binomial test resulted in Heiner Lake Tan and Fort Hood Yellow occurring in higher than expected frequency, Cowhouse White, Heiner Lake Translucent Brown, Fort Hood Gray, Owl Creek Black, and Cowhouse Mottled with Flecks occurring in expected amounts, and all others in less than expected amounts.

7.1.2.5 West Cowhouse Site Group

A total of 2,622 specimens of identified chert were recovered from this site group, which is approximately 23% of the total lithic materials. Of these, 2,384 are classified as debitage (91%), 15 as cores (0.5%), 47 as projectile points (2%), and 176 as non-point tools (7%) (Appendix G, Table 28). The chert preference appears to be split between Heiner Lake Tan and Fort Hood Yellow, with Heiner Lake Tan having a slight advantage. Heiner Lake Tan chert is the most abundant type of the total assemblage (23%), while Fort Hood Yellow is represented in the total assemblage at 19%. Gray/Brown/Green is another plentiful chert type, contributing 14%. Although the site group is along the western boundary of the fort, Heiner Lake Tan (a Southeast Range material) is still a preferred material. The Cowhouse bedload cherts have risen to 17% of the total assemblage with three types at fairly even representation: Cowhouse Mottled, Cowhouse Dark Gray, and Cowhouse Mottled with Flecks. The eight other bedload types are evenly distributed at much lower rates. The above patterns vary by site. In most site-level assemblages, Heiner Lake Tan or Fort Hood Yellow chert is the most prevalent but the bedload Cowhouse materials are very strong secondary contributors (Appendix G, Table 29). These Cowhouse materials are usually one of the following types: Cowhouse Mottled, Cowhouse Mottled with Flecks, Cowhouse Dark Gray, Cowhouse Mottled/Banded. In one case, Table Rock Flat is present in numbers exceeding Cowhouse Dark Gray and Cowhouse Mottled/Banded. In this site group, Southeast Range has clearly lost its dominance of chert usage and has been replaced by North Fort. Cowhouse bedload materials are also more strongly represented than in other site groups.

Of the grand total of 11,231 debitage specimens, 80% are decorticate; of the 2,384 identified cherts, 76% are decorticate (Appendix G, Table 30). These percentages are slightly higher than expected for experimental biface manufacture, but are among the second lowest of the site groups. Overall, the percentage of debitage smaller than 0.9 cm is low (17%) comparable to the archeological data used in conjunction with the experimental biface production (Tomka and Fields 1990:222) with a decortification rate approaching 100%. However, the amounts of specimens smaller than 0.9 cm is a factor of the high numbers of North Fort and unidentified materials, tempered by the Southeast Range, Cowhouse and West Fort materials. Decortification is a function of all the material types and is representative of the final stages of biface and projectile point manufacture. These small specimens attest to the importation of flake-blanks. The North Fort cherts have the highest rates of overall decortification.

These interpretations can be supported by viewing the breakdown of the individual chert types within the tool assemblages. Heiner Lake Tan, Fort Hood Yellow, Heiner Lake Translucent Brown, Gray/Brown/Green, and Owl Creek Black have the highest rates of debitage smaller than 0.9 cm in size and the highest corresponding rates of decortification. To a lesser degree, Heiner Lake Blue and Fort Hood Gray follow the same pattern.

Heiner Lake Tan retains its dominance as the chert of preference for projectile points and other tools with Heiner Lake Translucent Brown and Cowhouse Mottled with Flecks as major secondary choices. Fort Hood Yellow, Gray/Brown/Green, Fort Hood Gray, Owl Creek Black, Cowhouse Mottled, and Cowhouse Dark Gray are minor secondary choices for non-point tools. Within the debitage sample, Heiner Lake Tan dominates, with Fort Hood Yellow a major secondary material and Gray/Brown/Green and Owl Creek Black also present. The binomial test resulted in Heiner Lake Tan, Fort Hood Yellow, Heiner Lake Translucent Brown, Gray/Brown/Green, Owl Creek Black, and Cowhouse Mottled with Flecks occurring in higher than expected amounts, Cowhouse Mottled and Cowhouse Dark Gray occurring in expected amounts and all others in less than expected amounts.

7.1.2.6 Table Rock Site Group

A total of 233 specimens of identified chert were recovered from this site group, comprising approximately 18% of the total lithic materials. Of these, 197 are classified as debitage (85%), one as a core (0.4%), 10 as projectile points (4%), and 25 as non-point tools (11%) (Appendix G, Table 31). This site group has a much more even distribution between all the chert types than do other site groups. Heiner Lake Tan chert is the most abundant type of the total assemblage (25%). Although the site group is along the western boundary of the fort, Heiner Lake Tan is a preferred material with Fort Hood Yellow (a North Fort material) of secondary importance. Although Heiner Lake Tan dominates the overall assemblage, the cherts of secondary importance vary between sites and between classes of materials (Appendix G, Table 32). Within the debitage sample, the total amounts of Fort Hood Yellow and Heiner Lake Tan are fairly equal. There is, however, a wide variety in the relative frequency of the two materials and one case (41CV174) where the cherts are roughly equal. Moreover, the pattern of chert prevalence in the debitage clearly varies by site with Heiner Lake Tan and Fort Hood Yellow alternating as the preferred material.

Of the grand total of 1,252 debitage specimens, 80% are decorticate; of the 197 identified cherts, 76% are decorticate (Appendix G, Table 33). These percentages are within the expected range for experimental biface manufacture, and are the second lowest among the site groups. Overall, the percentage of debitage smaller than 0.9 cm is low (6%) and compares well to the experimental composite sample (Tomka and Fields 1990:222). Although the decortification rate is quite high at 83%, this may be skewed by the very small sample size. The Southeast Range and West Fort materials have the highest rates of overall decortification that is also a function of the small sample size.

These interpretations can be supported by viewing the breakdown of the individual chert types within the tool assemblages. Heiner Lake Blue and Owl Creek, and have the highest rates of debitage smaller than 0.9 cm in size and the highest corresponding rates of decortification. The limited number of specimens of identifiable chert makes any other conclusions suspect. Of the ten projectile points, three are Heiner Lake Tan, and two each are made of Fort Hood Gray and Gray/Brown/Green. Moreover, the majority of tools are made of Heiner Lake Tan, but Cowhouse Mottled with Flecks (n=4), Fort Hood Gray (n=3), and Gray/Brown/Green (n=3), are preferred materials for tool manufacture. The binomial test resulted in Heiner Lake Tan, Fort Hood Yellow, and Cowhouse Mottled occurring in higher than expected amounts and Fossiliferous Pale Brown, Cowhouse Light Gray, Cowhouse Striated, Cowhouse Novaculite, and Table Rock Flat occurring in less than expected frequency with all others at expected frequency.

7.1.2.7 Turkey Run Site Group

A total of 381 specimens of identified chert were recovered from this site group, comprising approximately 25% of the total lithic materials. Of these, 361 are classified as debitage (95%), two as cores (0.5%), five as projectile points (1%), and 13 as non-point tools (3%) (Appendix G, Table 34).

Although the site group is along the western boundary of the fort, Heiner Lake Tan (a Southeast Range material) is the preferred material of the total assemblage (77%). Cherts of secondary importance vary between sites (Appendix G, Table 35).

Of the grand total of 1,507 debitage specimens, 85% are decorticate, whereas of the 361 identified cherts 90% are decorticate (Appendix G, Table 36). These percentages are much higher than average for experimental biface manufacture, and are above average for the site groups. Overall, the percentage of debitage smaller than 0.9 cm is low (19%), and approaches the numbers expected for flake-blank reduction and mixed archeological assemblages (Tomka and Fields 1990:222) with a decortification rate of 95%. However, the number of specimens smaller than 0.9 cm is probably a factor of the small sample size.

The combined Southeast Range materials have the highest rates of overall decortification, whereas the other chert provinces are more in line with experimental biface reduction. This is a function of the small bifacial tools manufactured, together with the resharpening of the tools. As mentioned above, the Southeast Range materials are the predominate sources. The small sample size comes as no surprise since this site group is in a very chert-poor area. The predominance of the Southeast Range materials is of interest since it is from the Bell County portion of the fort, but given the predominance of Southeast Range materials (especially Heiner Lake Tan) among all the sites, the occurrence is not extraordinary.

These interpretations can be supported by viewing the breakdown of the individual chert types within the tool assemblages. Heiner Lake Tan has the highest rate of less than debitage smaller than 0.9 cm in size and the highest corresponding rates of decortification. To a lesser degree, Fort Hood Yellow follows the same pattern with all material lacking debitage being smaller than 0.9 cm in size. Only five projectile points were recovered - two of these were of Owl Creek Black and one was of Heiner Lake Tan. Regardless of material type, the majority of the non-point tools are edge-worked specimens (n=18, 51%) with the general category of bifacially worked implements second (n=12, 34%). Among the unidentified materials, light brown and light gray are the most prevalent; Heiner Lake Tan and Anderson Mountain Gray dominate the known chert types. Although the presence of Anderson Mountain Gray tools is expected, their form as bifaces is surprising given their limited knapping potential with or without heat treatment (Frederick and Ringstaff 1994:Table 6.5, 164). The binomial test resulted in Heiner Lake Tan occurring in higher than expected frequency, Cowhouse Mottled in expected frequency, and all others at less than expected frequency.

7.1.2.8 Summary of West Groups

The overall pattern of chert utilization for the western portion of Coryell County shows high amounts of North Fort materials, moderate amounts of Southeast Range materials, and lesser quantities of four to five of the same types of Cowhouse cherts (Table 7.4). The dominating North Fort chert types consist of Gray/Brown/Green, Fort Hood Yellow, and Owl Creek Black. These are the most easily knapped materials and it is not surprising to see the material preference switch from Southeast Range to North Fort as one moves west. However, what is not explainable is the continued preference for projectile points to be made of Heiner Lake Tan regardless of their distance from the chert source. There may be another source of Heiner Lake Tan in the central to western portions of the Fort, or there may be an unknown reason for its preference in making projectile points.

High quantities of indeterminate light brown chert specimens are found in all site groups. This type of debitage is probably due to small size inhibiting their recognition as identified types. Tools (projectile points as well as non-points) of this material may be another as yet undefined source, or may be named types (Heiner Lake Tan, Fort

Table 7.4 Summary of Key Characteristics of Lithic Debitage by Chert Province and Western Site Groups.

Site Group	Debitage Category	Southeast Range		North Fort		West Fort		Cowhouse		Identified total		Unidentifed		Total	
East Henson	% <0.9 cm	0	0%	9	2%	0	0%	0	0%	9	2%	40	13%	49	7%
	% <0.9 cm, decorticate	0	0%	9	100%	0	0%	0	0%	9	100%	40	100%	49	100%
	% >1.8 cm	14	39%	156	40%	0	0%	6	86%	176	40%	62	20%	238	32%
	% >1.8 cm, decorticate	5	36%	88	56%	0	0%	1	17%	94	53%	27	44%	121	51%
	% 0.9-1.8 cm	22	61%	228	58%	0	0%	1	14%	251	58%	208	67%	459	62%
	% of decorticate	26	72%	289	74%	0	0%	2	29%	317	73%	226	73%	543	73%
	Subtotal	*36*		*393*		*0*		*7*		*436*		*310*		*746*	
Shoal/Turnover	% <0.9 cm	9	8%	284	13%	0	0%	0	0%	293	13%	1268	41%	1561	29%
	% <0.9 cm, decorticate	8	89%	277	98%	0	0%	0	0%	285	97%	1085	86%	1370	88%
	% >1.8 cm	60	53%	913	42%	1	100%	5	71%	979	43%	467	15%	1446	27%
	% >1.8 cm, decorticate	27	45%	512	56%	1	100%	1	20%	541	55%	220	47%	761	53%
	% 0.9-1.8 cm	44	39%	977	45%	0	0%	2	29%	1023	45%	1327	43%	2350	44%
	% of decorticate	66	58%	1598	74%	1	100%	3	43%	1668	73%	2236	73%	3904	73%
	Subtotal	*113*		*2174*		*1*		*7*		*2295*		*3062*		*5357*	
Shell Mountain	% <0.9 cm	260	20%	1352	39%	13	15%	42	12%	1667	32%	8943	52%	10610	47%
	% <0.9 cm, decorticate	258	99%	1310	97%	13	100%	42	100%	1623	97%	8249	92%	9872	93%
	% >1.8 cm	345	27%	442	13%	27	31%	161	45%	975	19%	1515	9%	2490	11%
	% >1.8 cm, decorticate	235	68%	334	76%	22	81%	99	61%	690	71%	856	57%	1546	62%
	% 0.9-1.8 cm	668	52%	1716	49%	47	54%	158	44%	2589	49%	6866	40%	9455	42%
	% of decorticate	1124	88%	3239	92%	80	92%	279	77%	4722	90%	15172	88%	19894	88%
	Subtotal	*1273*		*3510*		*87*		*361*		*5231*		*17324*		*22555*	
Stampede	% <0.9 cm	0	0%	14	17%	0	0%	0	0%	14	10%	255	38%	269	33%
	% <0.9 cm, decorticate	0	0%	13	93%	0	0%	0	0%	13	93%	243	95%	256	95%
	% >1.8 cm	12	29%	17	21%	2	50%	7	44%	38	27%	79	12%	117	14%
	% >1.8 cm, decorticate	8	67%	11	65%	2	100%	4	57%	25	66%	38	48%	63	54%
	% 0.9-1.8 cm	30	71%	50	62%	2	50%	9	56%	91	64%	330	50%	421	52%
	% of decorticate	35	83%	69	85%	4	100%	12	75%	120	84%	576	87%	696	86%
	Subtotal	*42*		*81*		*4*		*16*		*143*		*664*		*807*	
West Cowhouse	% <0.9 cm	113	14%	302	25%	0	0%	1	0%	416	17%	3406	39%	3822	34%
	% <0.9 cm, decorticate	109	96%	301	100%	0	0%	1	100%	411	99%	3116	91%	3527	92%
	% >1.8 cm	269	34%	264	22%	11	44%	248	65%	792	33%	974	11%	1766	16%
	% >1.8 cm, decorticate	152	57%	155	59%	7	64%	73	29%	387	49%	456	47%	843	48%
	% 0.9-1.8 cm	400	51%	630	53%	14	56%	131	34%	1175	49%	4465	29%	5640	50%
	% of decorticate	634	81%	991	83%	18	72%	163	43%	1806	76%	7150	81%	8956	80%
	Subtotal	*782*		*1196*		*25*		*380*		*2383*		*8845*		*11228*	
Table Rock	% <0.9 cm	2	3%	9	14%	0	0%	1	2%	12	6%	308	29%	320	26%
	% <0.9 cm, decorticate	2	100%	7	78%	0	0%	1	100%	10	83%	281	91%	291	91%
	% >1.8 cm	27	39%	17	26%	2	18%	31	61%	77	39%	135	13%	212	17%
	% >1.8 cm, decorticate	17	63%	9	53%	1	50%	13	42%	40	52%	58	43%	98	46%
	% 0.9-1.8 cm	40	58%	40	61%	9	64%	19	37%	108	55%	612	58%	720	58%
	% of decorticate	59	86%	50	76%	9	82%	32	63%	150	76%	847	80%	997	80%
	Subtotal	*69*		*66*		*11*		*51*		*197*		*1055*		*1252*	
Turkey Run	% <0.9 cm	50	17%	1	5%	0	0%	0	0	51	14%	230	20%	281	19%
	% <0.9 cm, decorticate	49	98%	1	100%	0	0%	0	0	50	98%	218	95%	268	95%
	% >1.8 cm	52	17%	8	36%	8	53%	16	70%	84	23%	207	18%	291	19%
	% >1.8 cm, decorticate	36	69%	1	13%	4	50%	11	69%	52	62%	127	61%	179	62%
	% 0.9-1.8 cm	199	66%	13	59%	7	47%	7	30%	226	63%	709	62%	935	62%
	% of decorticate	284	94%	13	59%	9	60%	18	78%	324	90%	961	84%	1285	85%
	Subtotal	*301*		*22*		*15*		*23*		*361*		*1146*		*1507*	

Hood Yellow, or Gray/Brown/Green) which lack typical characteristics.

7.1.3 Chert Type Discussion

The following discussions treat each chert type individually, regardless of site group. By dividing the data in this way, we hope to see patterns which did not appear in the discussions of individual site groups.

7.1.3.1 Cowhouse Chert Province

Overall, the Cowhouse materials have very low percentages of debitage smaller than 0.9 cm in size, but these materials are 100% tertiary (Table 7.5). The greatest number of debitage is found in the largest size category (larger than 1.8 cm), with less than half of these tertiary. This pattern suggests large tool manufacture requiring very little cortex removal or involved biface reduction. Tools expected from this type of debitage may vary from formal Clear Fork and scraper-like tools to crushing and battering or chopping tools. However, this does not rule out early and middle stage bifaces. Grouping tools into inferred functional categories shows that Cowhouse materials are preferred for chopping and scraping activities over the North Fort cherts, but are significantly behind the Southeast Range materials which dominate every category (Figure 7.1). The graphs also show that Cowhouse cherts have a higher percentage of their types being selected for chopping and scraping activities and a greater variety of tools than the other provinces. The spatial distribution of these materials is highest in site groups that are on or close to the Cowhouse drainage.

Cowhouse Mottled

A total of 329 specimens of Cowhouse Mottled debitage were recovered, representing all 12 site groups and being the most prevalent of the Cowhouse materials. A total of six cores, three projectile points, and 42 non-point tools were recovered. The majority of the non-point tools are expediency related. Cowhouse Mottled follows the general pattern for the province materials, with 65% of the specimens larger than 1.8 cm in size and with a low (40%) overall decortification rate. Comparing this to the tools recovered, a total of seven specimens representing relatively large and partially decortified items are present. The spatial distribution matches that of the general pattern for the total province materials.

Table 7.5 Percentage of Debitage Characteristics by Chert Type for all Cowhouse Province Cherts.

		Total Debitage			Small Debitage (<0.9 cm)		Large Debitage (>1.8 cm)		Medium Debitage 0.9 to 1.8 cm
Lithic Material	N	decorticate	partial cortex	all cortex	Total	decorticate	Total	decorticate	Total
18-C Mottled	329	40%	40%	0%	5%	100%	65%	41%	30%
19-C Dr Gray	259	69%	31%	0%	16%	100%	38%	48%	46%
20-C Shell Hash	3	100%	0%	0%	0%	0%	100%	100%	0%
21-C Lgt Gray	15	67%	27%	0%	7%	100%	47%	43%	47%
22-C Mott/Flecks	246	64%	35%	0%	5%	100%	66%	73%	29%
23-C Mott/Banded	86	33%	65%	1%	0%	0%	73%	22%	27%
24-C Br Fossil	6	67%	33%	0%	0%	0%	67%	50%	33%
25-C Br Fleck	3	67%	33%	0%	0%	0%	33%	100%	67%
26-C Striated	36	83%	14%	3%	0%	0%	25%	33%	75%
27-C Novaculite	12	75%	25%	0%	0%	0%	67%	63%	33%
28-Table Rock Flat	43	63%	37%	0%	0%	0%	23%	10%	77%
Total	1038	62%	31%	0%	7%	100%	56%	44%	37%

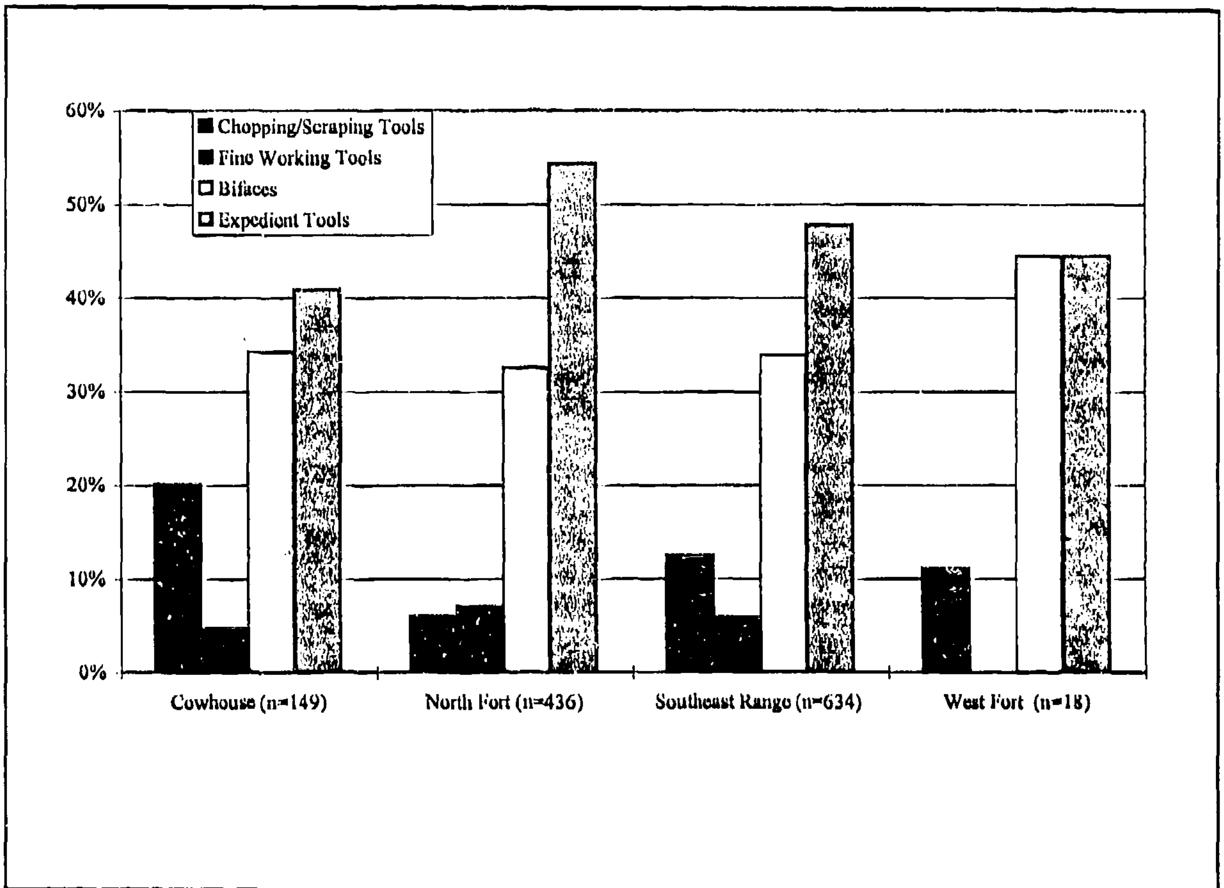


Figure 7.1 Material Types of Chert Tools, by Chert Province.

Cowhouse Dark Gray

A total of 259 specimens of Cowhouse Dark Gray debitage were recovered, representing nine site groups. Four projectile points, 25 non-point tools, and three cores from six site groups were also recovered. Although, this material follows the general pattern, the rate of specimens smaller than 0.9 cm is higher with most debitage skewed toward the lower end of the size distribution. The rate of decortification is higher than the average (69%) of the Cowhouse types. The debitage results can not be compared to the tools assemblage owing to the small number of non-expedient specimens recovered. In all but two site groups (Table Rock, Turkey Run) does this material occur in less than 1% of the total cherts.

Cowhouse Shell Hash

Only three specimens of Cowhouse Shell Hash debitage were recovered, one from each of three different site groups, and representing far less than 1% of the total materials. No tools or cores were recovered.

Cowhouse Light Gray

Fifteen specimens of Cowhouse Light Gray debitage were recovered, representing four site groups and constituting less than 1% of the total materials. No tools or cores were recovered. This chert type follows the general pattern for the smaller specimens but deviates in the medium and large sized categories. However, the decortification rate is slightly higher than the average (67%).

Cowhouse Mottled and Flecked

A total of 246 specimens of Cowhouse Mottled/Flecks debitage were recovered, representing ten site groups. These consist of one projectile point, 73 non-point tools, and six cores from ten site groups. The distribution of this material corresponds to those site groups within the Cowhouse drainage with the highest percentage in the Table Rock site group at 7% of the total. It constitutes greater than 1% in the eastern site groups (East Cowhouse). Although this type follows the pattern for size distribution, the

decortification rate among the larger specimens and that overall is higher than the average (64%). The tools show a higher number of small, bifacially worked specimens that have contributed to the higher rates of decortification.

Cowhouse Mottled and Banded

A total of 86 specimens of Cowhouse Mottled and Banded debitage were recovered, representing eight site groups. Al present are four tools and one core from four site groups. Similar to Cowhouse Mottled with Flecks, this chert is found in mostly western groups in very low percentages. No small debitage of this type was recovered, but it has the highest percentage of large debitage and the lowest percentage of tertiary materials. The partial cortex category is higher than the average decortification rate suggesting that many of the end products of reduction were formal large-sized tools; however, if these tools were manufactured the tools were removed from the sites.

Cowhouse Brown Fossiliferous

Only six specimens of Cowhouse Brown Fossiliferous debitage and one non-point tool were recovered from single site group.

Cowhouse Brown Flecked

Only three specimens of Cowhouse Brown Flecked debitage and one non-point tool were recovered, representing two site groups.

Cowhouse Striated

A total of 36 specimens of Cowhouse Striated debitage and one non-point tool were recovered, representing five site groups. The majority of the specimens of this chert are found in the medium-sized category. This material also has the highest decortification rate among all the Cowhouse materials.

Cowhouse Novaculite

Twelve specimens of Cowhouse Novaculite debitage and two non-point tools were recovered representing five site groups. This material has no specimens smaller than 0.9 cm in size and 60% of the debitage are larger than 1.8 cm. It has the second highest decortification rate among the Cowhouse materials.

Table Rock Flat

A total of 43 specimens of Table Rock Flat debitage were recovered, representing seven site groups of mostly western groups. No tools or cores were recovered. This material has no specimens smaller than 0.9 cm in size, and approximately 75% of the debitage are between 0.9 and 1.8 cm in size. The rate of decortification approximates the average. These data indicate that formal tools of medium to large size were produced with a minimal of cortex removal.

7.1.3.2 North Fort Chert Province

Overall the North Fort materials have very high percentages of less than 0.9 cm in size debitage and these materials are 97% tertiary (Table 7.6). The highest number of debitage is found in the 0.9-1.8 cm categories with 41% of these being tertiary. This indicates a balance between large

Table 7.6 Percentage of Debitage Characteristics by Chert Type for all North Fort Province Cherts.

		Total Debitage			Small Debitage (<0.9 cm)		Large Debitage (>1.8 cm)		Medium Debitage 0.9 to 1.8 cm
Lithic Material	N	decorticate	partial cortex	all cortex	Total	decorticate	Total	decorticate	Total
08-FH Yellow	6936	84%	16%	0%	30%	98%	23%	59%	47%
11-ER Flat	49	92%	8%	0%	29%	100%	24%	67%	47%
14-FH Gray	702	82%	18%	0%	8%	100%	38%	68%	54%
15-Gry/Brn/Grn	5513	84%	16%	0%	29%	94%	19%	63%	52%
16-Leona Park	7	86%	14%	0%	0%	0%	57%	75%	43%
17-Owl Crk Black	3392	93%	7%	0%	55%	98%	6%	67%	39%
Total	16598	86%	13%	0%	34%	97%	19%	61%	47%

and small tool manufacture requiring cortex removal or full staged biface reduction. The percentage of debitage larger than 1.8 cm in size without cortex is high, implicating that the flake-blanks were being brought to the site for further reduction. Grouping tools into inferred functional categories shows that North Fort materials are second in preference for fine work to Southeast Range, which dominates every category (see Figure 7.1). The graphs also show that North Fort cherts have a higher percentage of their types being selected for use as expedient tools.

Fort Hood Yellow

A total of 6,936 specimens of Fort Hood Yellow debitage were recovered, representing all 12 site groups. Also present are 35 projectile points, 151 non-point tools, and nine cores from ten of the site groups. Over three-quarters of the debitage of this popular material is smaller than 1.8 cm in size, with an overall decortification rate of 84%; this suggests the reduction of partially decortified flake-blanks. From the debitage data, we would expect to find tools of all categories, rather than the concentration of staged biface specimens and projectile points. The tool assemblage verifies the expected outcome. Eighty-one percent of all tools are either projectile points or staged bifaces. Fort Hood Yellow and Owl Creek Black have the highest percentage of projectile points made from cherts belonging to this province. However, Gray/Brown/Green has a slightly higher percentage of bifacial tools than Fort Hood Yellow. The geographic distribution from east to west peaks in the Shoal/Turnover site group at 83% and drops off quickly in the site groups to the south and west.

East Range Flat

A total of 49 specimens of East Range Flat debitage were recovered, representing six site groups. Also present are one projectile point and three non-point tools from two site groups. The greatest number of specimens of this chert type are between 0.9 and 1.8 cm in size. It also has a higher percentage of decorticates in the larger size categories than Fort Hood Yellow. Overall, 92% of the debitage lacks cortex. From the debitage data it is expected that the tool assemblage would contain large bifacially flaked specimens. However, with the exception of Leona Park chert, East Range Flat has the lowest number of overall tools (n=6). Once again, it appears that tools manufactured on-site were removed and/or discarded elsewhere.

Fort Hood Gray

A total of 702 specimens of Fort Hood Gray debitage were recovered, representing all 12 site groups. Also recovered were ten projectile points, 60 non-point tools, and six cores from 10 site groups. Several peaks in frequency are noted, with the highest in East Henson site group. This occurrence may signal a as yet undefined source locale. If the rate of decortification were lower, the amount of debitage in the largest size category would indicate that this material was reduced using multidirectional core technology (Tomka and Fields 1990:222). However, the 68% rate of tertiary debitage in this size category suggests that large flake-blanks were being brought to the sites for further reduction. This is further supported by the 100% rate of tertiary debitage in the smaller than 0.9 cm category. Looking at the tool assemblage, it can be seen that one-third of tools are staged bifaces, with a rise in the frequency from early stage to late and a slight drop off to finished bifaces. Another reason for the need to import flake-blanks other than transportation costs may be inferred from the form in which the material outcrops. Fort Hood Gray nodules can be larger than 50 cm and wider than 30 cm necessitating some reduction of size and weight at the quarry location. Although Fort Hood Gray is used for bifaces, the frequency of projectile points recovered of this material is only more abundant than East Range Flat chert (n=1). It is possible that Fort Hood Gray may be better suited for durable knives, given its tendency for larger crystalline structure than the other North Fort cherts.

Gray/Brown/Green

A total of 5,513 specimens of Gray/Brown/Green debitage were recovered, representing all 12 site groups. Also present are 28 projectile points, 164 non-point tools, and seven cores from all 12 site groups. Three frequency peaks are noted, of which Owl Creek is the highest at 48% of the total cherts. Gray/Brown/Green chert is one of the most popular North Fort chert types, second only to Fort Hood Yellow, and follows the reduction strategy utilized for Fort Hood Yellow. One-third of the specimens are smaller than 0.9 cm in size, with decortification rates over 90%. The middle-sized category includes just over 50% of all specimens with an overall decortification rate of 84%. These data suggest a wide range of tools are made from this material, but rates of tertiary debitage implicate a reliance more on bifacial reduction of tools. Other than Fort Hood Yellow and Owl Creek Black, Gray/Brown/Green chert has the highest number of projectile points and the highest number of tools made from this chert. These data suggest that Gray/Brown/Green is a versatile material that serves equally as well for tools needing strength as it does for those needing elasticity.

Leona Park

Only seven specimens of Leona Park debitage and two non-point tools were recovered from four of the 12 site groups. There are no specimens of Leona Park smaller than 0.9 cm in size, but more than 50% of this material is 1.8 cm or larger. Overall there is a 86% decortification rate implying importation of flake-blanks that were reduced further but not to a small tool size. However, only two decortified utilized specimens (just under 3 cm in size) were recovered. It would seem that any larger tools made from this material have been taken elsewhere.

Owl Creek Black

A total of 3,392 specimens of Owl Creek Black debitage were recovered, representing all 12 site groups. Also present are 35 projectile points, 54 non-point tools, and two cores from nine site groups with a general pattern of increasing frequency from east to west (except for two site groups which have small sample sizes). Owl Creek Black is the third most popular of the North Fort cherts, but has the highest rates of small (less than 0.9 cm) specimens and the highest overall decortification rate (93%). These data alone suggest that Owl Creek Black is a preferred material for small, decortified tools. Further, only 6% of the total specimens are larger than 1.8 cm in size, indicating the importation of flake-blanks. Although Owl Creek Black has fewer than half as many tools as Fort Hood Yellow, it has the same number of projectile points. Moreover, 39% of the total number of tools of Owl Creek Black are projectile points, which is the highest for any of the North Fort cherts.

7.1.3.3 Southeast Range Chert Province

Overall, the Southeast Range materials have very high percentages of debitage smaller than 0.9 cm in size, and these materials are 100% tertiary (Table 7.7). The highest number of debitage is found in the 0.9-1.8 cm category, with 45% tertiary. This indicates a balance between large and small tool manufacture requiring cortex removal or full-staged biface reduction. The percentage of debitage without cortex and larger than 1.8 cm in size is high, suggesting that the flake-blanks were being brought to the site for further reduction. Grouping the tools into inferred functional categories shows that Southeast Range dominate every category of tool function, as is seen in Figure 7.1. Not shown on this graph, but also dominated by Southeast Range materials are projectile points.

Heiner Lake Blue

A total of 1,411 specimens of Heiner Lake Blue debitage were recovered, representing 11 site groups. Also present are one projectile point, 43 non-point tools, and seven cores from six site groups. These peak in the Southeast Range vicinity and drop off quickly as one moves from east to west. The debitage is evenly split between the medium-sized specimens and the combined small and large sized categories; the overall decortification rate is 93%. This implies the production of bifaces, which is partially supported by the small number of bifacial implements recovered.

Cowhouse White

A total of 295 specimens of Cowhouse White debitage were recovered from 11 site groups. Also recovered were two projectile points and 20 non-point tools from nine site groups with the greatest representation along the Cowhouse drainage. The percentage of debitage smaller than 0.9 cm (7%) and the overall decortification rate (78%) compare well with experimental expectations (Tomka and Fields 1990:222). Fifty percent of the debitage is greater than 1.8 cm size with a rate of tertiary materials within that expected for bifacing. The recovered tool assemblage is rather small and does not fully support the expectations gathered from the debitage. Most likely, tools made of Cowhouse White were removed from the site(s).

Texas Novaculite

Sixteen specimens of Texas Novaculite debitage and one non-point tool were recovered from four site groups. The small number of specimens belonging to this chert type is too small to warrant any interpretations.

Table 7.7 Percentage of Debitage Characteristics by Chert Type for all Southeast Range Province Cherts.

		Total Debitage			Small Debitage (<0.9 cm)		Large Debitage (>1.8 cm)		Medium Debitage 0.9 to 1.8 cm
Lithic Material	N	decorticate	partial cortex	all cortex	Total	decorticate	Total	decorticate	Total
HL Blue (1&10)	1411	93%	7%	0%	21%	99%	29%	83%	50%
02-C White	295	78%	21%	0%	7%	86%	50%	67%	43%
05-Texas Novac	16	63%	38%	0%	0%	0%	100%	50%	13%
06-HL Tan	5748	90%	10%	0%	30%	100%	23%	70%	47%
07-Foss Pale Brown	318	55%	43%	0%	4%	100%	62%	39%	33%
09-HL Tr Brown	5162	93%	7%	0%	31%	99%	20%	77%	49%
13-ER Flecked	133	92%	8%	0%	26%	100%	19%	88%	56%
Total	13083	90%	19%	0%	28%	100%	24%	72%	48%

Heiner Lake Tan

A total of 5,748 specimens of Heiner Lake Tan debitage were recovered, representing all 12 site groups. Also recovered were 109 projectile points, 393 non-point tools, and 26 cores from all site groups. The spatial distribution of this popular material is generally constant (about 20% to 30%), with the only deviations occurring in site groups in the "heartland" of the North Fort chert province -- Owl Creek, East Henson, and Shoal/Turnover. This material is the second most popular chert overall, with 6,278 specimens from all lithic classes. In total, it is 19% of the total lithic assemblage, second only to Fort Hood Yellow. However, of note and as yet not fully explained is its contribution to the different classes. Forty-three percent of all projectile points are made from Heiner Lake Tan; only Fort Hood Yellow and Owl Creek Black come close at 14% each. What makes these numbers hard to explain is the classification of Fort Hood Yellow as a higher quality chert without heat treating (Frederick and Ringstaff 1994:159-181). In other words, in order to make Heiner Lake Tan equivalent to Fort Hood Yellow in easy of reduction, the knapper would have to heat treat the material. This results in a situation where a material which requires more preparation energy (Heiner Lake Tan) is used in preference to a lower cost alternative (Fort Hood Yellow). Clearly, the higher cost for processing Heiner Lake Tan must have been worth the investment. Of note, however, is that the site groups in the heart of the North Fort province use the local materials. Outside of the North Fort province, the incidence of Southeast Range materials again increases.

Fossiliferous Pale Brown

A total of 318 specimens of Fossiliferous Pale Brown debitage were recovered from 11 site groups. Also recovered were 28 non-point tools and three cores from eight site groups. These vary from less than 0.25% to about 7.5% of the total with the greatest representation in the Nolan Cowhouse site group. The percentage of specimens smaller than 0.9 cm is close to that obtained through experimental bifacial reduction of nodules. However, the percentage of the largest size debitage (greater than 1.8 cm) is higher than that seen for multidirectional core reduction. The percentage of debitage between 0.9 and 1.8 cm in size is much lower than any experimentally produced category. It would seem that there is a gap in explanation of the different size categories of debitage. Looking at the overall decorticate rate, Fossiliferous Pale Brown chert is extremely close to the amount produced through multidirectional core reduction. This suggests a mixture of strategies with no clear indication of which is the dominant factor. It may be that the "natural" state of the material necessitates reduction through a core technology to produce a flake-blank which is then further reduced using biface technology. However, our small sample size may be insufficient to clearly define patterns. The tools produced from Fossiliferous Pale Brown are mostly of the edge-worked categories with few bifaces and no projectile points recovered. Overall, only 4% of the total tools made from Southeast Range materials are Fossiliferous Pale Brown cherts.

Heiner Lake Translucent Brown

A total of 5,162 specimens of Heiner Lake Translucent Brown debitage were recovered, representing all 12 site groups. Also recovered were 20 projectile points, 139 non-point tools, and two cores from ten of the 12 site groups. These vary from 50% of the total (Nolan South group) to less than 0.25% (Shoal/Turnover group), and generally decrease from east to west. This material is the second most popular chert of the Southeast Range province. It has a high rate of debitage smaller than 0.9 cm in size and a correspondingly high rate of tertiary debitage. The relative percentage of the remaining size categories suggests that the flake size distribution may be skewed toward the small end of the spectrum, implying an importation of partially reduced flake-blanks. This is further supported by the high rate of overall decortification (93%) and the high rate of tertiary materials among the larger size class.

As a preferred material Heiner, Lake Translucent Brown chert has the second highest number of tools recovered for a Southeast Range material. It is one of the top five preferred cherts for all of Fort Hood for all classes of materials, and is frequently one of the top two materials in the eastern site groups - on occasion it is even more abundant that Heiner Lake Tan.

East Range Flecked

A total of 133 specimens of East Range Flecked debitage and three projectile points and eight non-point tools were recovered from six of the 12 site groups. Only two site groups having frequencies greater than 1% of the total. This material is the second rarest material from the Southeast Range (after Texas Novaculite). It has a high rate of debitage smaller than 0.9 cm in size (all are tertiary). Its overall decortification rate is 92% which is also considered high. The tool assemblage is limited and merely supports that the proposition that late stage biface reduction was being performed with the presence of three projectile points and eight tools including five bifaces taken past the middle stage of reduction.

7.1.3.4 West Fort Chert Province

Overall, the West Fort province materials are very limited in spatial representation with only 375 specimens. Most of these are Anderson Mountain Gray chert (Table 7.8). However, the chert types are present in varying amounts in 11 of the 12 site groups. Of note is the spatial placement of the site group having the most Anderson Mountain Gray material: the Nolan Cowhouse Site group. This presence would be more noteworthy except for the suspicion that a close analog to Anderson Mountain Gray may also be a Southeast Range material. The general trend is for over 50% of the specimens to be of the medium size grades and have high rates (more than 80%) of decortification. The only kind of tools not made of West Fort materials are the fine working tools (e.g., gravers, drills).

Anderson Mountain Gray

A total of 347 specimens of Anderson Mountain Gray debitage were recovered from 11 of the 12 site groups. Also present were four projectile points and 18 non-point tools from seven site groups. These correspond to site groups in or near the Cowhouse drainage. Since the majority of West Fort materials are Anderson Mountain Gray, is not surprising that Anderson Mountain Gray closely follows the general pattern.

Seven Mile Novaculite

A total of 28 specimens of Seven Mile Novaculite debitage were recovered from five site groups. No tools or cores were recovered, and only two site groups have more than 1% of the total. Utilization of this material was less frequent than expected, occurring in only five of the 12 site groups and reflected in mostly small specimens.

Table 7.8 Percentage of Debitage Characteristics by Chert Type for all West Fort Province Cherts.

		Total Debitage			Small Debitage (<0.9 cm)		Large Debitage (>1.8 cm)		Medium Debitage 0.9 to 1.8 cm
Lithic Material	N	decorticate	partial cortex	all cortex	Total	decorticate	Total	decorticate	Total
03-AM Gray	347	85%	14%	1%	14%	89%	30%	75%	56%
04-7 Mile Novac	28	57%	43%	0%	50%	71%	25%	14%	25%
Total	375	83%	28%	0%	16%	85%	30%	71%	54%

7.1.3.5 Conclusions

The analysis of chert resources at the Fort still only scratches the surface of the raw material selective process. There are many factors which can not be controlled and thus any interpretations of perceived patterns are not absolute. Although we may never know the entire universe of chert resources, our understanding of lithic raw material selection process can be refined through a continuation of the analyses that have been completed thus far. In order to maximize chert samples, such analyses should probably be limited to data recovery assemblages. It should be pointed out that although debitage comprises about 103,000 (69%) of the more than 150,000 recovered specimens, only about 30% of these (n=31,095) are of identifiable cherts and are thus conducive to our chert selection analyses. Further analysis should include attributes that would enable the researcher to eliminate some of the more obvious explanations of reduction stage, e.g., platform type.

7.2 NON-DEBITAGE LITHICS AND OTHER ARTIFACTS

Significant and substantive analysis and interpretation of articles recovered during our previous testing phase at Fort Hood (Abbott and Trierweiler 1994) was hampered by spatial distribution of sites and site groups as well as by the numbers of particular kind of sites. By contrast, the data resulting from our combined testing program includes large numbers of artifacts in relatively good context, with a more even distribution of sites and site groups. The following discussion combines items recovered during the current testing with those from the earlier testing phase for a total of 119 sites.

Because of the subjective nature of projectile point typologies in general, we have not attempted to statistically define tight attribute ranges for each projectile point type. Compounding this is the current nature of Texas point typology, which relies heavily on rather vague definitions (see Callister, Quigg, and Peck 1994). This is most obvious in cases where a "name" has been attributed to a morphological category when in fact, the form is a technological stage in the manufacture. That is, alamgre are probably Langtry preforms as pointed out by a reviewer of an earlier draft of this manuscript. Furthermore, the long use-periods (especially of Archaic dart points) precludes control of point style evolution without tight chronometric data (which is lacking in most sites excavated in Texas). For these reasons, no attempt was made to compare the various types of projectile points to each other.

The reviewer of the earlier draft of this report commented that if the projectile point typology is held with such contempt why did it get applied extensively in the results chapter. The answer must be that even with a re-evaluation of the typology, one must start from a common point of departure. This is the main reason that although this author disagrees with some of the point types and named tool types (e.g., Turner and Hester 1994), they have to be used while the refining of the typology continues. Both the author and the single individual who "typed" all the points agree that some of the previously classified preforms (Abbott and Trierweiler 1994) were probably categorized technologically correct, the accepted point typology attributes names to these forms. Likewise, although this author strongly suspects that the Clear Fork tool subforms represent two separate processing activities (i.e., adze and gouge), the literature refers to them by name. We have attempted to provide a common ground from which to deviate without completely changing the accepted classification scheme.

7.2.1 Projectile Points

Our analyzed sample includes 216 projectile points from the current test excavations, and is supplemented with 344 points from our previous phases of testing (Abbott and Trierweiler 1995, Quigg and Ellis 1994) for a total of 560 points (Table 7.9). Following completion of our first testing report (Abbott and Trierweiler 1995), we restructured our tool typology and reclassified

Table 7.9 All Projectile Points Recovered by Chert Province and Individual Chert Type.

		Dart Point Type																																		Arrow Point Type											Indeterminate				
Chert Province	Lithic Material	Almagre	Andice	Angostura	Barber	Bulverde	Cameron	Castroville	Caton	Darl	Edgewood	Ellis	Ensor	Fairland	Frio	Godley	Gower	Kent	Lange	Langtry	Marcos	Marshall	Martindale	Matamoros	Montell	Morrill	Nolan	Palmillas	Pedernales	Plainview	Travis	Uvalde	Wells	Wilson	Yarbrough	*Subtotal*	Bonham	Bulbar Stemmed	Chadbourne	Cliffton	Fresno	Perdiz	Sabinal	Scallorn	Starr	Young	*Subtotal*	Other Arrow	Other Dart	Indeterminate	*Subtotal*	Total
Identified Types																																																				
Cowhouse	18-C Mottled	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	*2*	0	0	0	0	0	0	0	0	0	0	*0*	0	1	0	*1*	3
	19-C Dr Grey	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*0*	0	0	0	0	0	0	0	0	0	0	*0*	0	3	1	*4*	4
	23-C Mott/Flecks	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*1*	0	0	0	0	0	0	0	0	0	0	*0*	0	0	0	*0*	1
	Subtotal	*0*	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*3*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*4*	*1*	*5*	*8*
North Fort	08-FH Yellow	0	0	0	0	0	0	3	0	2	3	3	1	1	0	0	0	0	0	0	1	2	1	0	0	0	0	0	2	0	0	1	1	0	0	*21*	0	0	0	0	1	0	0	1	0	0	*2*	5	7	0	*12*	35
	11-ER Flat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	*1*	0	0	0	0	0	0	0	0	0	0	*0*	0	0	0	*0*	1
	14-FH Gray	0	0	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	*6*	0	0	0	0	0	0	0	1	0	0	*1*	0	2	1	*3*	10
	15-Gry/Brn/Grn	1	0	1	0	3	0	3	0	1	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	1	*19*	0	1	0	0	0	1	0	0	0	0	*2*	3	4	0	*7*	28
	17-Owl Crk Black	0	2	0	0	0	0	1	0	3	2	0	2	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	*19*	0	0	0	0	0	0	0	4	0	0	*4*	3	9	0	*12*	35
	Subtotal	*1*	*2*	*1*	*0*	*5*	*0*	*8*	*0*	*6*	*6*	*3*	*5*	*1*	*1*	*0*	*0*	*1*	*4*	*1*	*1*	*4*	*1*	*0*	*0*	*0*	*0*	*0*	*12*	*0*	*0*	*1*	*1*	*0*	*1*	*66*	*0*	*1*	*0*	*0*	*1*	*1*	*0*	*6*	*0*	*0*	*9*	*11*	*22*	*1*	*34*	*109*
Southeast Range	02-C White	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*0*	0	0	0	0	0	0	0	0	0	0	*0*	0	2	0	*2*	2
	06-HL Tan	0	1	0	0	2	0	6	0	5	2	0	7	0	0	2	0	0	3	0	4	7	0	0	4	2	0	1	18	0	0	1	1	1	0	*67*	1	1	0	0	0	2	1	6	0	0	*11*	9	21	1	*31*	109
	09-HL Tr Brown	0	0	0	0	2	0	5	0	0	0	1	0	0	0	0	0	0	1	0	3	1	0	0	2	0	0	0	1	1	0	0	0	0	0	*17*	0	0	0	0	0	0	0	0	0	0	*0*	0	3	0	*3*	20
	10-HL Blue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*0*	0	0	0	0	0	0	0	0	0	0	*0*	0	1	0	*1*	1
	13-ER Flecked	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*1*	0	0	0	0	0	0	0	1	0	1	*2*	0	0	0	*0*	3
	Subtotal	*0*	*1*	*0*	*0*	*4*	*0*	*12*	*0*	*5*	*2*	*1*	*7*	*0*	*0*	*2*	*0*	*0*	*4*	*0*	*7*	*8*	*0*	*0*	*6*	*2*	*0*	*1*	*19*	*1*	*0*	*1*	*1*	*1*	*0*	*85*	*1*	*1*	*0*	*0*	*0*	*2*	*1*	*7*	*0*	*1*	*13*	*9*	*27*	*1*	*37*	*135*
West Fort	03-AM Gray	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	*3*	0	0	0	0	0	0	0	0	0	0	*0*	1	0	0	*1*	4
Subtotal		*1*	*3*	*1*	*0*	*9*	*0*	*21*	*0*	*11*	*8*	*4*	*13*	*1*	*1*	*2*	*0*	*1*	*8*	*1*	*8*	*12*	*2*	*0*	*6*	*3*	*1*	*1*	*32*	*1*	*0*	*2*	*2*	*1*	*1*	*157*	*1*	*2*	*0*	*0*	*1*	*3*	*1*	*13*	*0*	*1*	*22*	*21*	*53*	*3*	*77*	*256*
Unidentified Types																																																				
	Indet Black	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*3*	0	0	0	0	0	0	0	2	0	0	*2*	1	1	0	*2*	7
	Indet Dk Brown	0	0	0	0	2	0	1	0	2	2	0	2	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	1	0	2	0	0	0	0	*16*	2	0	0	1	2	0	0	11	0	0	*16*	3	12	1	*16*	48
	Indet Dk Gray	0	0	0	0	1	1	0	1	3	0	2	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	4	0	0	0	0	0	0	*15*	1	0	1	0	0	1	0	4	0	0	*7*	7	10	1	*18*	40
	Indet Lt Brown	0	0	0	0	2	0	1	0	2	1	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	2	0	4	0	1	0	0	0	1	*17*	3	1	0	1	2	4	1	22	1	2	*37*	27	15	6	*48*	102
	Indet Lt Gray	0	0	0	0	2	0	1	0	4	1	0	1	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	4	0	0	0	[illegible]	0	0	*16*	1	0	0	1	0	0	0	3	0	0	*5*	4	8	1	*13*	34
	Indet Misc.	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	1	0	0	0	0	0	0	*7*	4	0	0	0	1	0	0	9	0	0	*14*	10	5	0	*15*	36
	Indet Mottled	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	*2*	2	1	0	0	0	0	0	3	0	1	*7*	0	2	3	*5*	14
	Indet Trans	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*2*	0	0	0	0	0	0	0	0	0	0	*0*	0	0	0	*0*	2
	Indet White	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	*4*	1	0	0	0	1	0	0	6	0	1	*9*	4	4	0	*8*	21
Subtotal		*0*	*0*	*0*	*1*	*8*	*1*	*6*	*1*	*15*	*4*	*2*	*4*	*1*	*1*	*0*	*1*	*1*	*2*	*0*	*3*	*0*	*2*	*1*	*6*	*0*	*2*	*0*	*15*	*0*	*3*	*0*	*0*	*0*	*2*	*82*	*14*	*3*	*1*	*3*	*6*	*5*	*1*	*60*	*1*	*4*	*98*	*55*	*57*	*12*	*124*	*304*
Total		1	3	1	1	17	1	27	1	26	12	6	17	2	2	2	1	2	10	1	11	12	4	1	12	3	3	1	47	1	3	2	2	1	3	*239*	15	5	1	3	7	8	2	73	1	5	*120*	76	110	15	*201*	560

many tools such that some artifacts (mostly fragments) which had been classified as "preforms" or as "late stage bifaces" are now included in the projectile point class (albeit untyped). This reclassification is discussed further in Chapter 4.0.

Of the total, 110 dart points and 76 arrow points could not be typed. Additionally, 15 projectile points could not be classified as either dart or arrow point. As a result, 359 specimens were classified (64%). Of the total of 560 specimens, only 118 points were complete (21%), and only 256 were of identifiable chert (45%).

The point assemblage includes 44 named varieties but is dominated by Scallorn arrow points (n=73, 13%), and by Pedernales (n=47, 8%), Castroville (n=27, 5%) and Darl (n=26, 5%) dart points (Figures 7.2 through 7.8). The 256 points which were manufactured from an identified chert type are dominated by specimens of Heiner Lake Tan (n=109, 42%). Only Fort Hood Yellow (n=35, 14%), Owl Creek Black (n=35, 14%), and Gray/Brown/Green (n=28, 11%) begin to come close to the frequency of Heiner Lake Tan. The number of points made from indeterminate light brown cherts is also very high (n=102, 34% of the unidentified materials). These materials could be any of the four named types except for Owl Creek Black. These data strongly suggest that the two chert provinces of preference are the North Fort and Southeast Range, and within those, Fort Hood Yellow and Heiner Lake Tan are the most preferred materials.

Although Frederick and Ringstaff (1994:Table 6.5; 164) state that Fort Hood Yellow is a high quality knapping material even unaltered by heat, the assumed high cultural cost of Southeast Range Heiner Lake Tan does not preclude its collection and use. It would seem that the chert collection strategy is "embedded" (Binford 1979:259) within another activity that involves traveling to the Southeast Range outcrop locations. There would be a significant time commitment for the procurement of chert alone if the collection were not an embedded strategy when a highly desirable

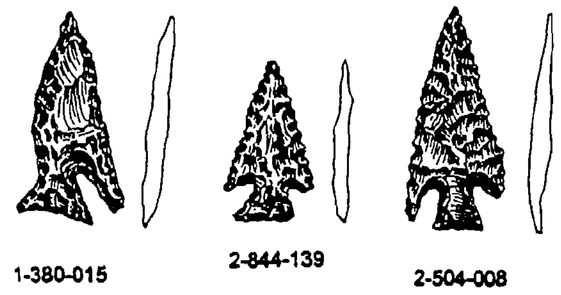


Figure 7.2 Selected Scallorn Arrow Points (Actual Size).

material (in the opinion of modern knappers) lies at the doorstep of North Fort area inhabitants. However, there may well be closer sources of Southeast Range type material, specifically in the areas of the fort that are not well-known or surveyed for chert resources.

The Nolan/South site grouping includes 75 projectile points ranging in time from the Late Paleoindian through the Late Prehistoric II. The majority of chert typed points are made of Heiner Lake Tan (n=13, 52% of identified total) (Appendix G, Table 37). (Indeterminate dark brown and light brown cherts also contribute high numbers to the total points.) Only North Fort and Southeast Range cherts are found in this grouping. Not unexpectedly, Owl Creek Black chert is the most prevalent of the North Fort chert types. Except for the untyped dart and arrow points, Pedernales dart points are the most prevalent type found in the Nolan South site group. Both the preferred North Fort and Southeast Range cherts are present; no other chert province is represented.

The Nolan/Cowhouse site grouping includes 52 projectile points ranging in time from the Middle Archaic through the Late Prehistoric II (Appendix G, Table 38). Southeast Range cherts contribute more points than does the North Fort province, with Heiner Lake Tan chert (n=11, 69%) again being the most dominant identified type. Once

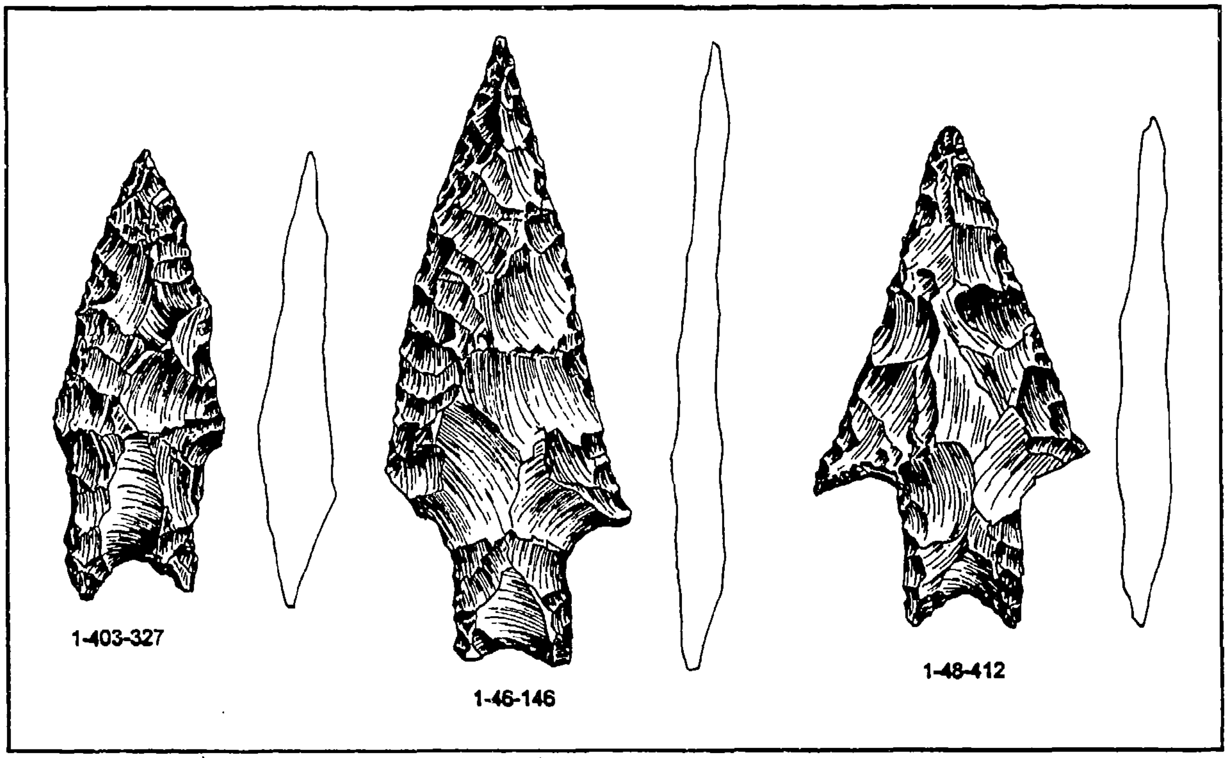


Figure 7.3 Selected Pedernales Dart Points (Actual Size).

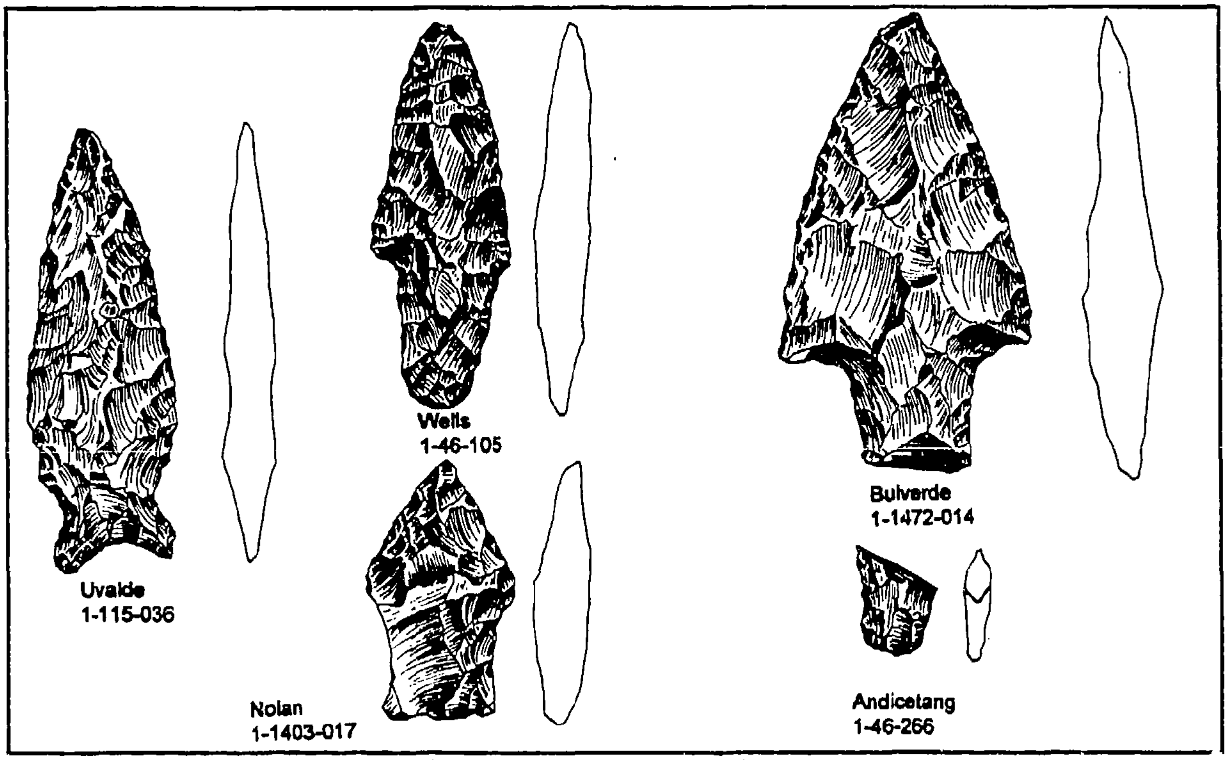


Figure 7.4 Selected Early Archaic Dart Points (Actual Size).

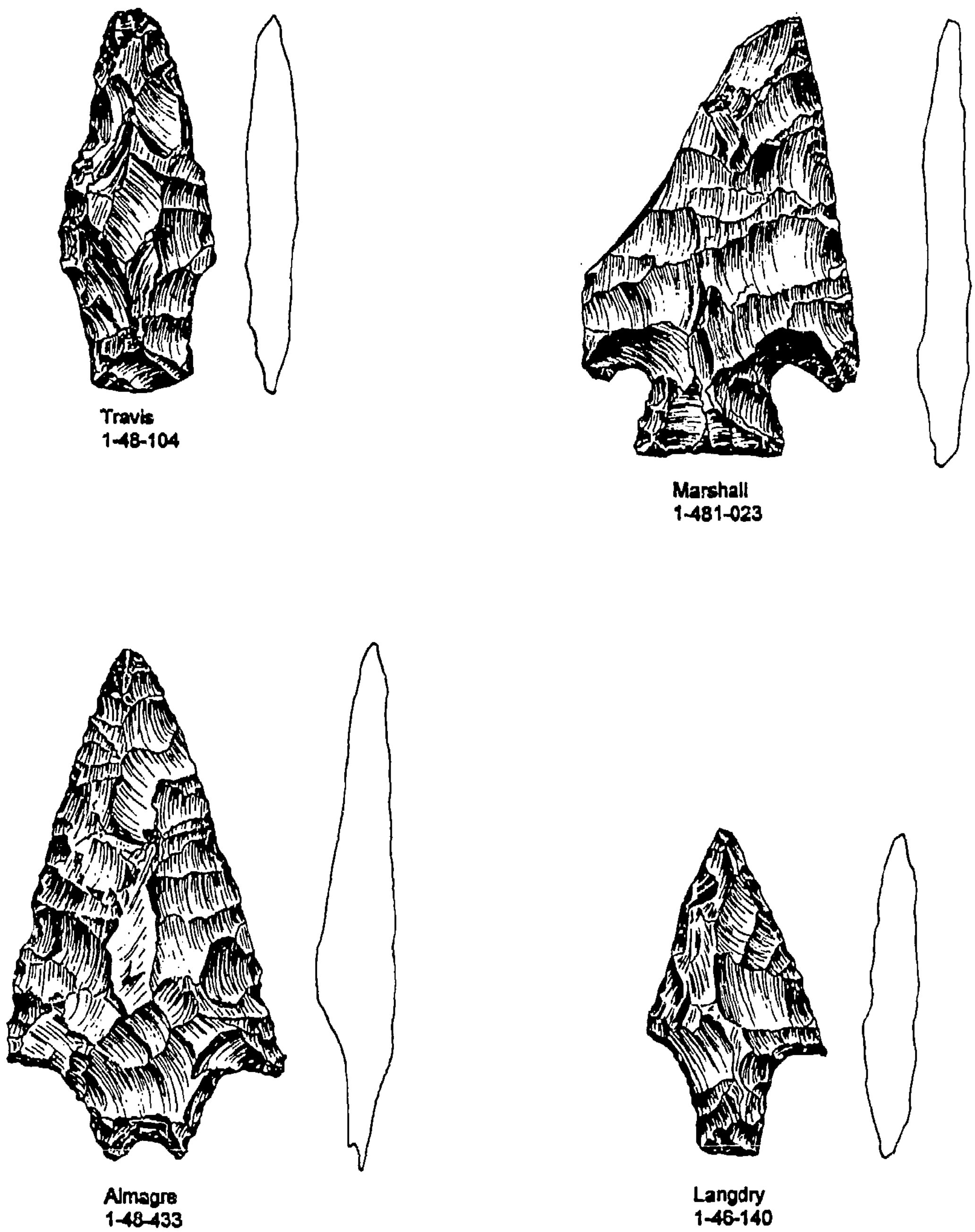


Figure 7.5 Selected Middle Archaic Dart Points (Actual Size).

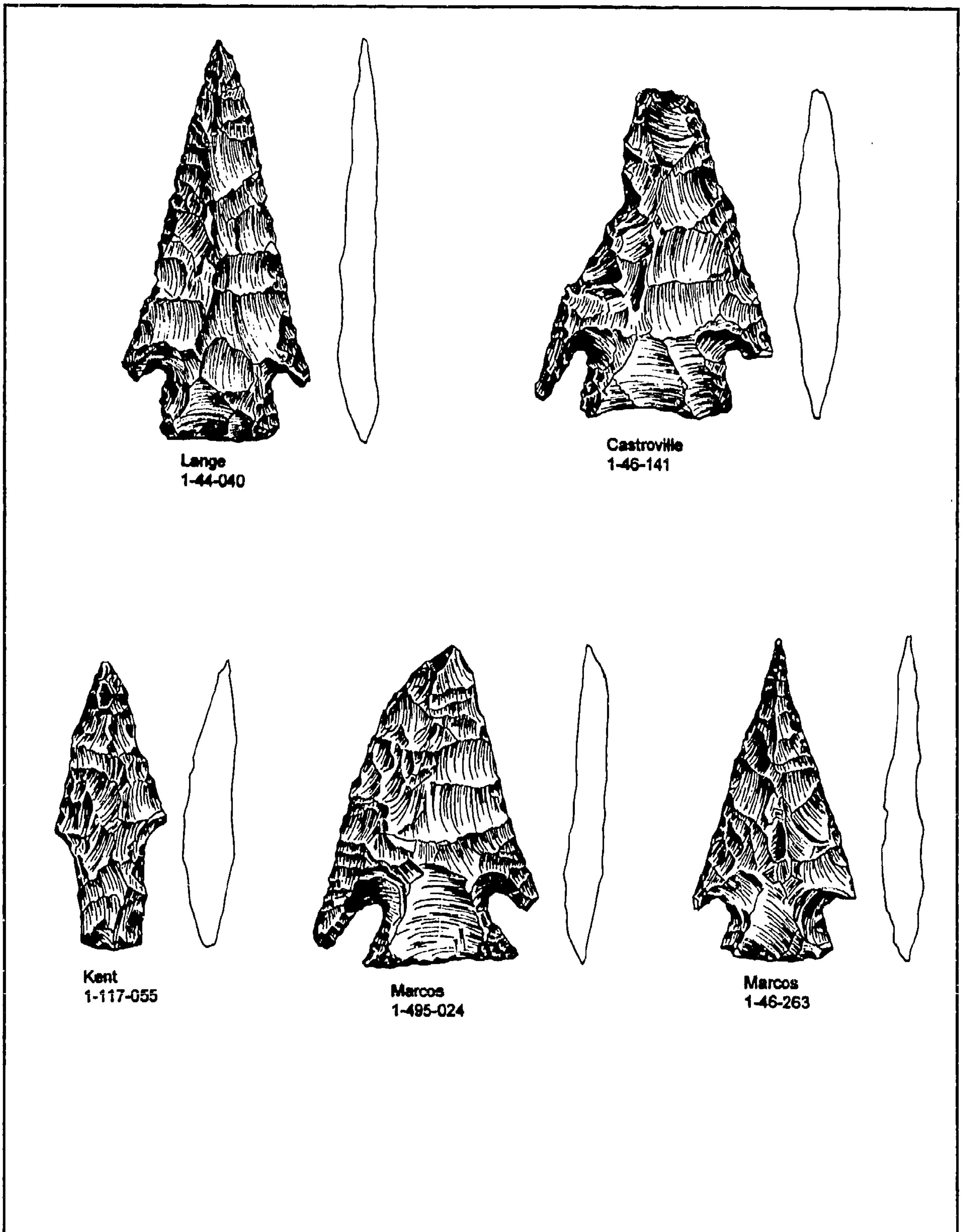


Figure 7.6 Selected Late Archaic Dart Points (Actual Size).

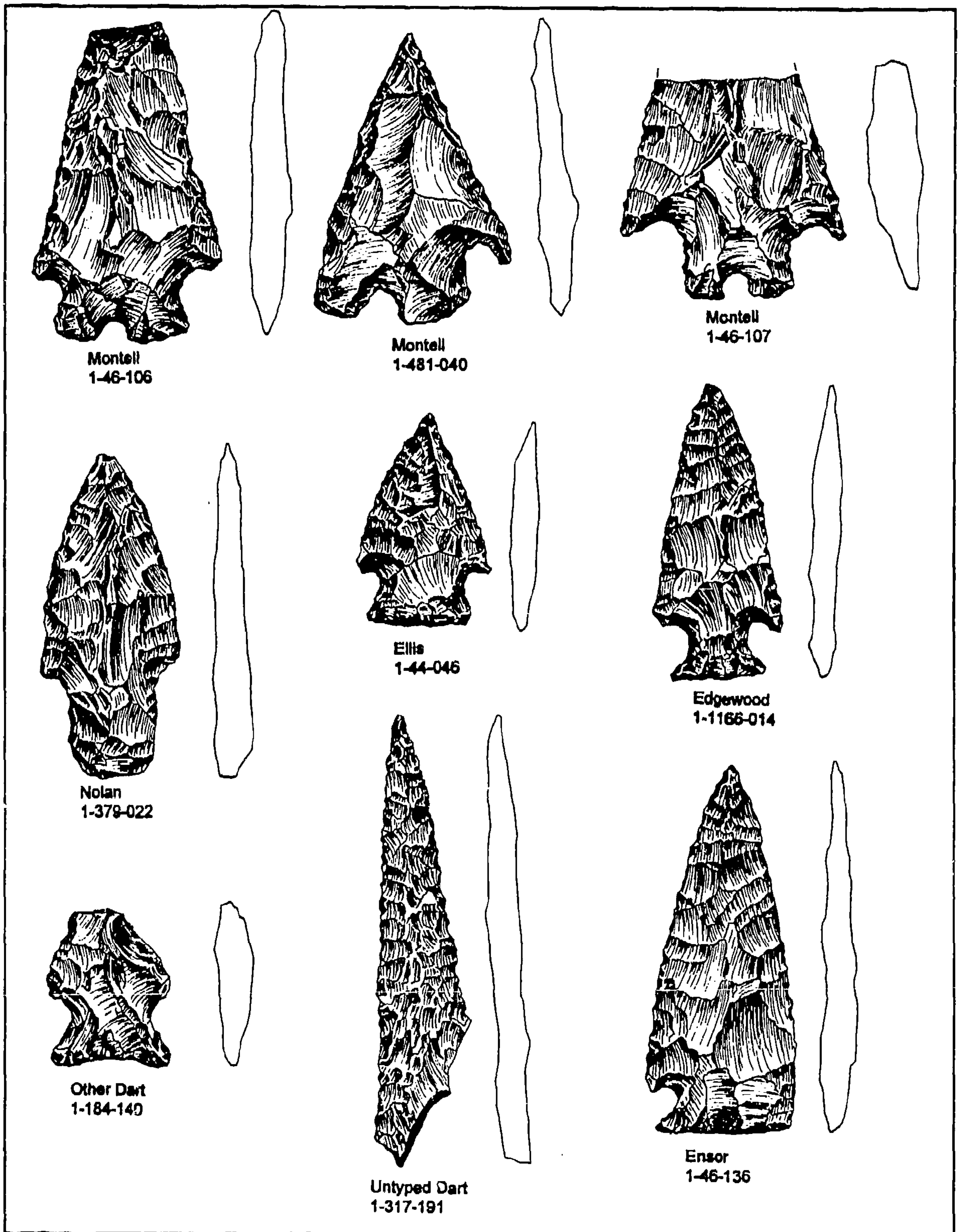


Figure 7.7 Selected Late/Transitional Archaic and Untyped Dart Points (Actual Size).

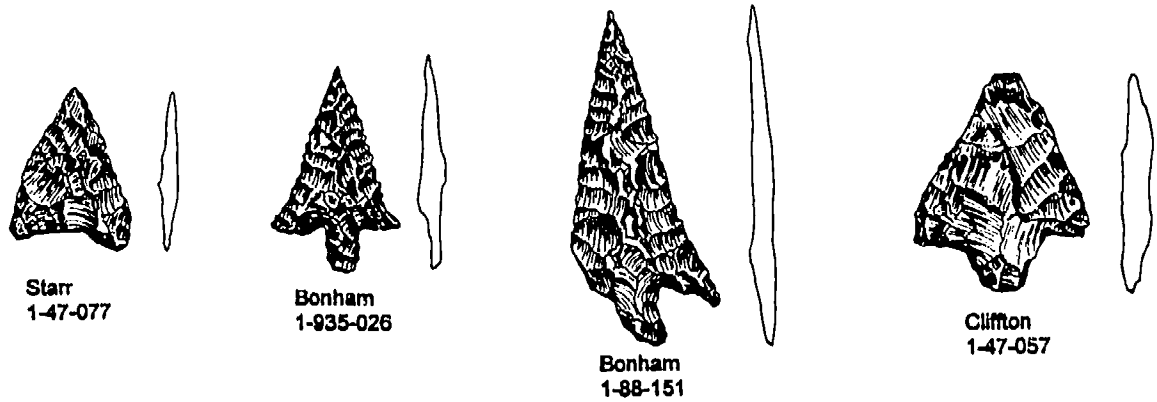


Figure 7.8 Selected Arrow Points (Actual Size).

again, indeterminate light brown chert (n=17) the largest number of specimens of all chert types. Other than the untyped dart and arrow points, Bonham (n=5), Darl (n=7), and Scallorn (n=6) points are the most prevalent types. Both the preferred North Fort and Southeast Range cherts are present; no other chert province is represented.

The East Cowhouse site grouping includes only three points: Lange, Pedernales, and Scallorn. Only the Pedernales was of a typeable chert material - Heiner Lake Tan from the Southeast Range.

The Cowhouse/Taylor/Bear site grouping includes 24 projectile points with nine points of identified cherts ranging in time from the Early Archaic through the Late Prehistoric (Appendix G, Table 39). The majority of these points are of indeterminate light brown chert. No identified chert has a clear majority; however, the most dominant four types are present. Both the preferred North Fort and Heiner Lake Tan from the Southeast Range are present; only one type from the Cowhouse chert province is present.

The Owl Creek site group includes 72 projectile points ranging in time from the Early Archaic through the Late Prehistoric II (Appendix G, Table 40). Unlike the previous site groups, the most dominant identified cherts outnumber the most dominant indeterminate chert type. Not too surprising is that Owl Creek Black chert points are nearly equal in frequency to the Heiner Lake Tan points. By contrast, Gray/Brown/Green chert points are present in half this frequency. This pattern was also seen in the debitage, suggesting that Gray/Brown/Green is a preferred material that occasionally outnumbers Fort Hood Yellow, Heiner Lake Tan, and Owl Creek Black in usage. Pedernales dart points are a clear majority, even taking precedence over the untyped dart and arrow points. The remaining are fairly even split among many other types. Both the preferred North Fort and Southeast Range cherts are present; only one type from the Cowhouse chert province is present.

The East Henson site grouping includes only seven points with the untyped dart point category exceeding all others (Appendix G, Table 41). Only the Heiner Lake Tan and Gray/Brown/Green are represented by more than one point.

The Shoal/Turnover site grouping includes 16 projectile points ranging in time from the Early Archaic to the Late Prehistoric II (Appendix G, Table 42). No single chert type (including the indeterminates) is in the majority. Other than the untyped dart point category, no type of point dominates. Both the preferred North Fort cherts and Heiner Lake Tan from the Southeast Range are present; no other chert province is represented.

The Shell Mountain site grouping includes 176 projectile points. These range in time from the Early Archaic through the Late Prehistoric II (Appendix G, Table 43). Excluding the untyped dart and arrow points, Scallorn arrow points dominate the total assemblage (n=30, 17% of total), but most of these (n=21) are made from indeterminate chert types. Castroville and Pedernales dart points are also well represented at 9% and 7%, respectively. The dominant identified chert material is Heiner Lake Tan (n=30, 38% of identified total), followed by Fort Hood Yellow (n=19, 24% of identified total). Indeterminate light brown chert, however, is the most preferred material overall with 32 specimens (18% of total). All four chert provinces are represented.

The Stampede site grouping includes 17 projectile points ranging in time from the Middle Archaic through the Late Prehistoric I (Appendix G, Table 44). Only untyped dart points stand out. A slight majority are made from Heiner Lake Tan. Both the preferred North Fort and Southeast Range cherts are present; no other chert province is represented.

The West Cowhouse site group includes 91 projectile points ranging in time from the Paleoindian through the Late Prehistoric II (Appendix G, Table 45). After the untyped dart and arrow points, the most prevalent type is the Late Archaic Castroville dart point. Of note are 24 points made from Heiner Lake Tan and the presence of one Anderson Mountain Gray chert point from the West Fort chert province. After the Heiner Lake Tan points, only indeterminate light brown chert points are abundant. Again, the light brown chert is possibly Fort Hood Yellow, Heiner Lake Tan, and/or Gray/Brown/Green. All four chert provinces are represented.

The Table Rock site grouping includes 17 projectile points ranging in time from the Early Archaic through the Late Prehistoric II (Appendix G, Table 46). No single point type dominates, but North Fort cherts are more abundant than the Southeast Range (represented only by Heiner Lake Tan). Both the preferred North Fort and Heiner Lake Tan from the Southeast Range are present; only two chert types from the Cowhouse province are present.

The Turkey Run site group includes only ten projectile points. No chert type or point type is dominant (Appendix G, Table 47). Both the preferred North Fort and Heiner Lake Tan from the Southeast Range are present; only Anderson Mountain Gray chert from the West Fort chert province is present.

7.2.2 Lithic Tools and Cores

As with the projectile points, the lithic tools and cores we recovered from our earlier testing phase were integrated with those from the current testing. Of the total of 2,173 recovered specimens, 2,053 are chipped stone tools (95%), 112 are cores (5%), and seven are ground stone. Sixty percent of these (n=1,317) are made from identifiable cherts (Table 7.10; Figures 7.9 through 7.18). There are 11 non-chert tools.

The Nolan/South site group has 20 different kinds of tools for a total of 449 specimens. Of these, 281 are of identifiable chert (63%), and four are of non-chert (Appendix G, Table 48). Only one single-platform chert of Cowhouse chert was recovered. The tools range from a high of 220 expedient tools to a single ground stone (metate) specimen and a Waco sinker. One hundred and forty-eight staged bifaces also are found in this assemblage. The majority of the tools are made from Southeast Range cherts and among these Heiner Lake Tan tools are the most prevalent.

The Nolan/Cowhouse site group has 13 different kinds of tools for a total of 151 specimens. Of these, 80 are of identifiable chert (53%) and two are non-chert (Appendix G, Table 49). Thirteen cores were recovered, including a single core fragment specimen. The tools range from a high

Table 7.10 All Non-projectile Point Tools Recovered by Chert Province and Individual Chert Type.

Chert Province	Lithic Material	adze	biface	Chopper Type A	Chopper Type B	Clear Fork Type A	Clear Fork Type B	complex scraper	Crushing/Abrading	Denticulate	drill	early stage biface	edge modified	end scraper	finished biface	graver	Hammerstone	late stage biface	mano	metate	middle stage biface	other tool	perforator	side scraper	sinker	spokeshave	stone awl	uniface	utilized	wedge	Total
		Tool Type																													
Identified Types																															
Cowhouse	18-C Mottled	0	0	1	2	0	0	0	0	0	0	1	12	2	2	1	0	2	0	0	3	0	0	4	0	1	0	0	11	0	42
	19-C Dr Gray	0	0	0	0	0	0	1	2	0	1	0	6	1	2	0	0	5	0	0	1	0	0	0	0	0	0	0	6	0	25
	22-C Mott/Flecks	0	0	3	2	0	1	2	4	0	0	4	12	2	6	1	0	9	0	0	14	0	0	2	0	3	0	0	8	0	73
	23-C Mott/Banded	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	4
	24-C Br Fossil	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	25-C Br Fleck	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	26-C Striated	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	27-C Novaculite	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
	Subtotal	*0*	*0*	*4*	*4*	*0*	*1*	*3*	*7*	*0*	*1*	*5*	*32*	*5*	*10*	*2*	*0*	*17*	*0*	*0*	*19*	*0*	*0*	*6*	*0*	*4*	*0*	*0*	*29*	*0*	*149*
North Fort	08-FH Yellow	1	0	0	1	0	0	0	0	0	0	7	10	0	16	8	0	14	0	0	7	0	0	4	0	6	1	0	76	0	151
	11-ER Flat	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3	0	5
	14-FH Gray	0	0	0	3	0	0	0	3	0	0	1	4	0	7	3	0	9	0	0	3	0	0	5	0	1	0	0	21	0	60
	15-Gry/Brn/Grn	0	0	1	1	0	0	1	1	0	4	5	8	0	12	3	0	29	0	0	6	0	0	3	0	2	0	0	88	0	164
	16-Leona Park	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
	17-Owl Crk Black	0	0	0	0	0	0	0	1	0	1	1	2	0	8	0	0	14	0	0	0	0	1	1	0	2	0	0	23	0	54
	Subtotal	*1*	*0*	*1*	*5*	*0*	*0*	*1*	*5*	*0*	*5*	*14*	*24*	*0*	*44*	*14*	*0*	*67*	*0*	*0*	*16*	*0*	*1*	*13*	*0*	*11*	*1*	*0*	*213*	*0*	*436*
Southeast Range	01-HL Blue(1 & 10)	0	0	1	0	0	0	0	1	0	0	4	4	0	4	1	0	8	0	0	2	0	0	2	0	4	0	0	13	0	45
	02-C White	0	0	0	0	0	0	0	0	0	0	0	4	0	0	2	0	2	0	0	0	0	0	1	0	0	0	0	11	0	20
	05-Texas Novac	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	06-HL Tan	0	0	7	5	1	1	2	9	0	7	22	57	9	39	11	1	43	0	0	34	0	1	11	0	5	0	0	128	0	394
	07-Foss Pale Brown	0	0	1	0	1	0	1	1	0	0	2	9	1	6	1	0	1	0	0	1	0	0	0	0	0	0	0	9	0	28
	09-HL Tr Brown	0	0	1	1	2	0	3	1	0	1	7	22	6	5	4	0	17	0	0	14	0	0	8	0	1	0	0	42	0	139
	13-ER Flecked	0	0	0	0	0	0	0	0	0	0	0	1	1	4	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	8
	Subtotal	*0*	*0*	*10*	*6*	*4*	*1*	*6*	*12*	*0*	*8*	*35*	*97*	*17*	*56*	*19*	*1*	*71*	*0*	*0*	*52*	*0*	*1*	*22*	*0*	*16*	*0*	*0*	*206*	*0*	*635*
West Fort	03-AM Gray	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	3	0	0	3	0	0	1	0	0	0	0	7	0	18
Subtotal		*1*	*1*	*15*	*15*	*4*	*2*	*10*	*24*	*0*	*14*	*54*	*154*	*23*	*111*	*35*	*1*	*158*	*0*	*0*	*90*	*0*	*2*	*42*	*0*	*25*	*1*	*0*	*455*	*0*	*1238*
Unidentified Types																															
	Indet Black	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	5
	Indet Dk Brown	0	0	1	0	1	0	0	1	0	3	0	20	3	13	3	0	13	0	0	7	1	0	4	0	1	0	1	39	0	111
	Indet Dk Gray	0	0	1	0	0	0	0	0	0	1	0	5	1	6	2	0	10	0	0	5	0	1	1	0	2	0	0	26	0	61
	Indet Lt Brown	0	0	1	9	0	0	0	1	1	1	6	46	8	26	12	0	41	0	0	19	0	0	11	0	9	0	0	129	1	322
	Indet Lt Gray	0	0	0	0	0	0	0	0	0	2	4	15	1	5	4	0	10	0	0	2	0	1	2	0	1	0	1	35	0	83
	Indet Misc.	0	0	2	0	0	0	0	0	1	0	0	12	0	2	2	1	10	0	0	4	0	0	3	0	3	0	0	38	0	78
	Indet Mottled	0	0	2	1	0	0	1	1	0	0	1	12	2	3	1	0	18	0	0	6	0	0	2	0	2	0	0	41	0	93
	Indet Trans	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	4
	Indet White	0	0	0	0	0	0	0	0	1	0	3	7	0	2	1	0	7	0	0	0	0	0	2	0	0	0	0	23	0	46
Subtotal		*0*	*0*	*7*	*10*	*1*	*0*	*1*	*3*	*3*	*7*	*15*	*118*	*15*	*57*	*26*	*1*	*110*	*0*	*0*	*43*	*1*	*2*	*25*	*0*	*19*	*0*	*2*	*333*	*1*	*804*
Other	Limestone	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	1	2	0	0	0	0	0	0	0	0	0	0	6
	Quartzite	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	2	0	0	0	0	0	1	0	0	0	0	0	11
	Sandstone	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	Subtotal	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*11*	*0*	*3*	*3*	*0*	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*0*	*18*
Total		1	1	22	25	5	2	11	27	3	21	69	272	38	170	61	13	268	3	3	133	1	4	67	1	44	1	2	788	1	2060

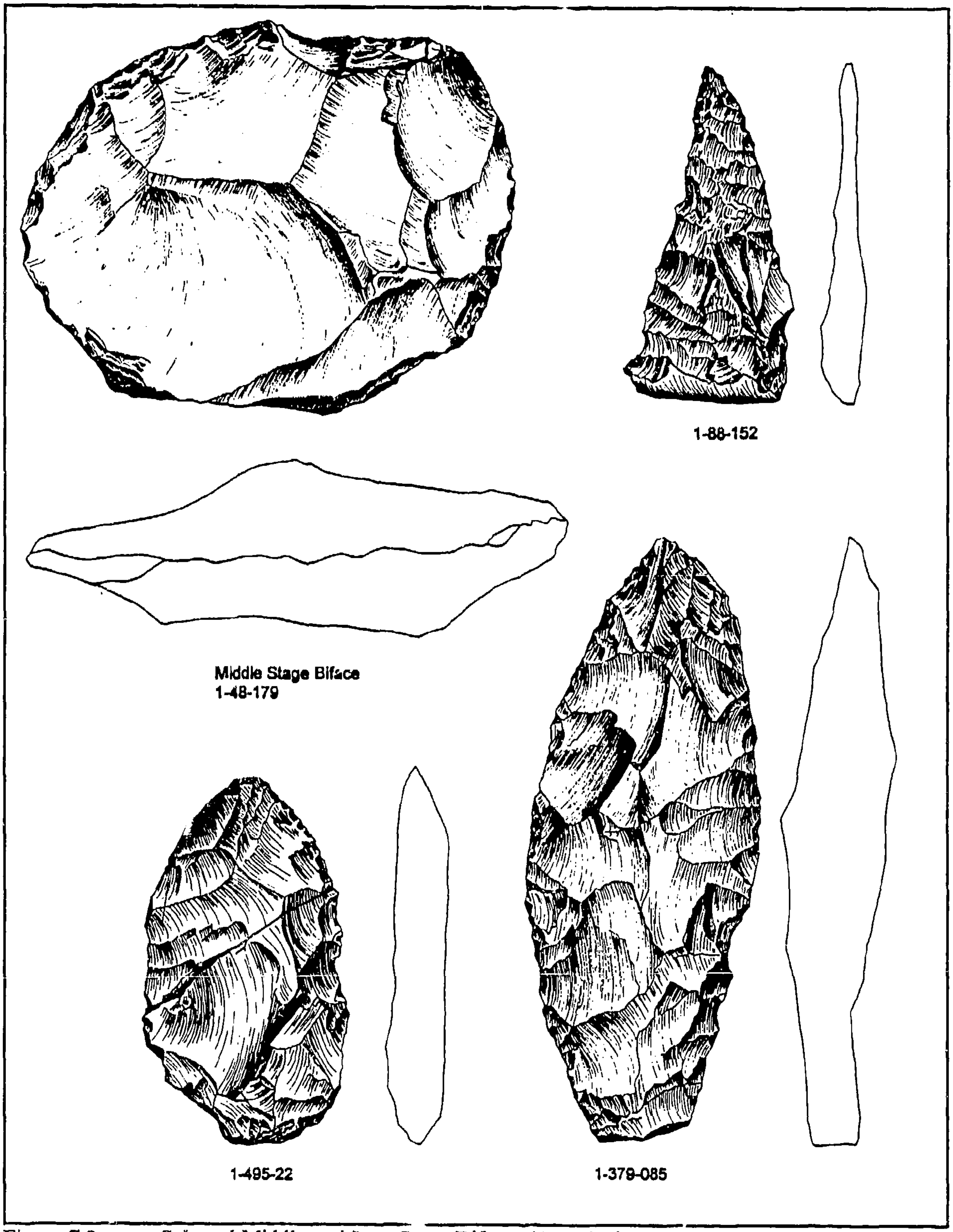


Figure 7.9 Selected Middle and Late Stage Bifaces (Actual Size).

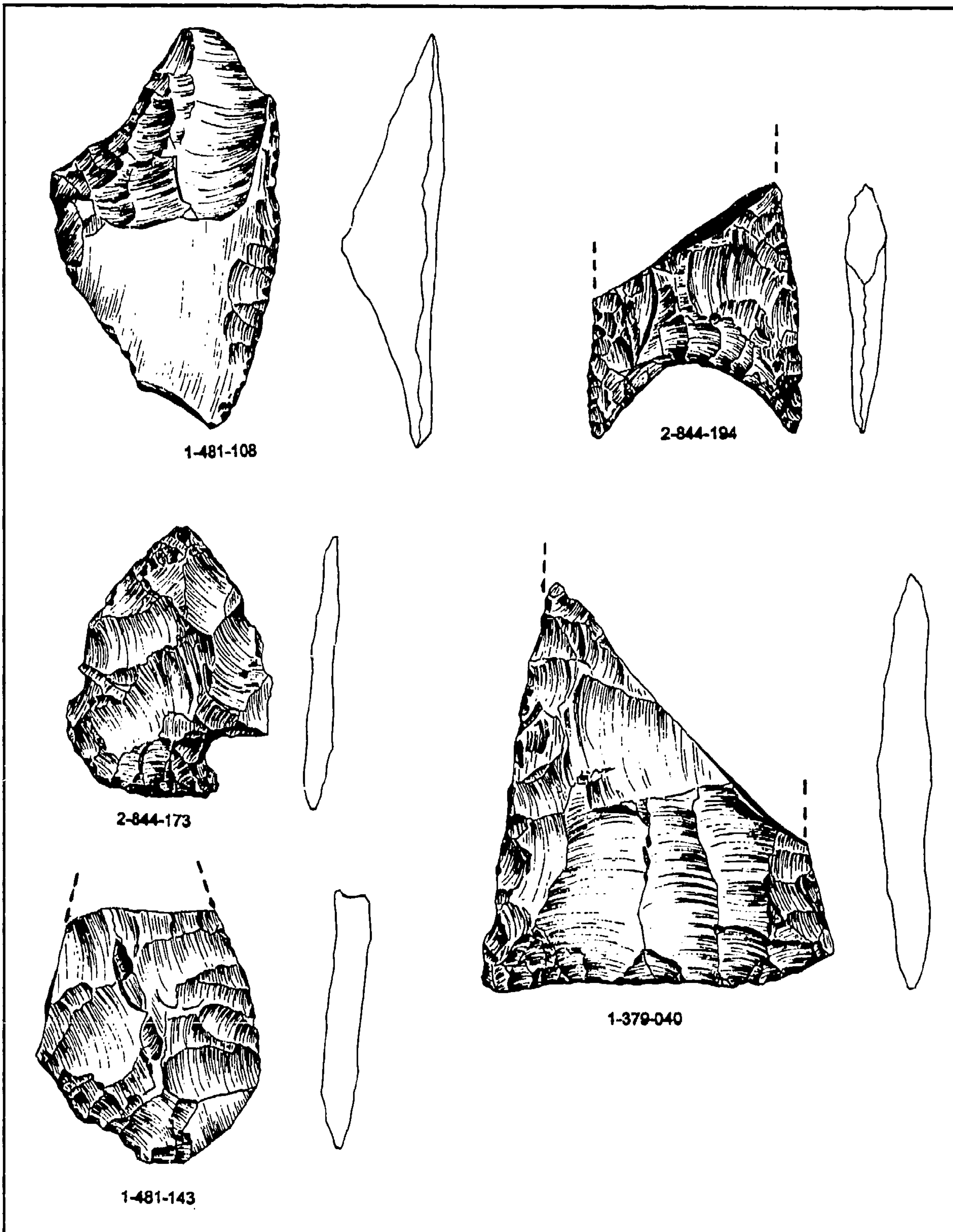


Figure 7.10 Selected Finished Bifaces (Actual Size).

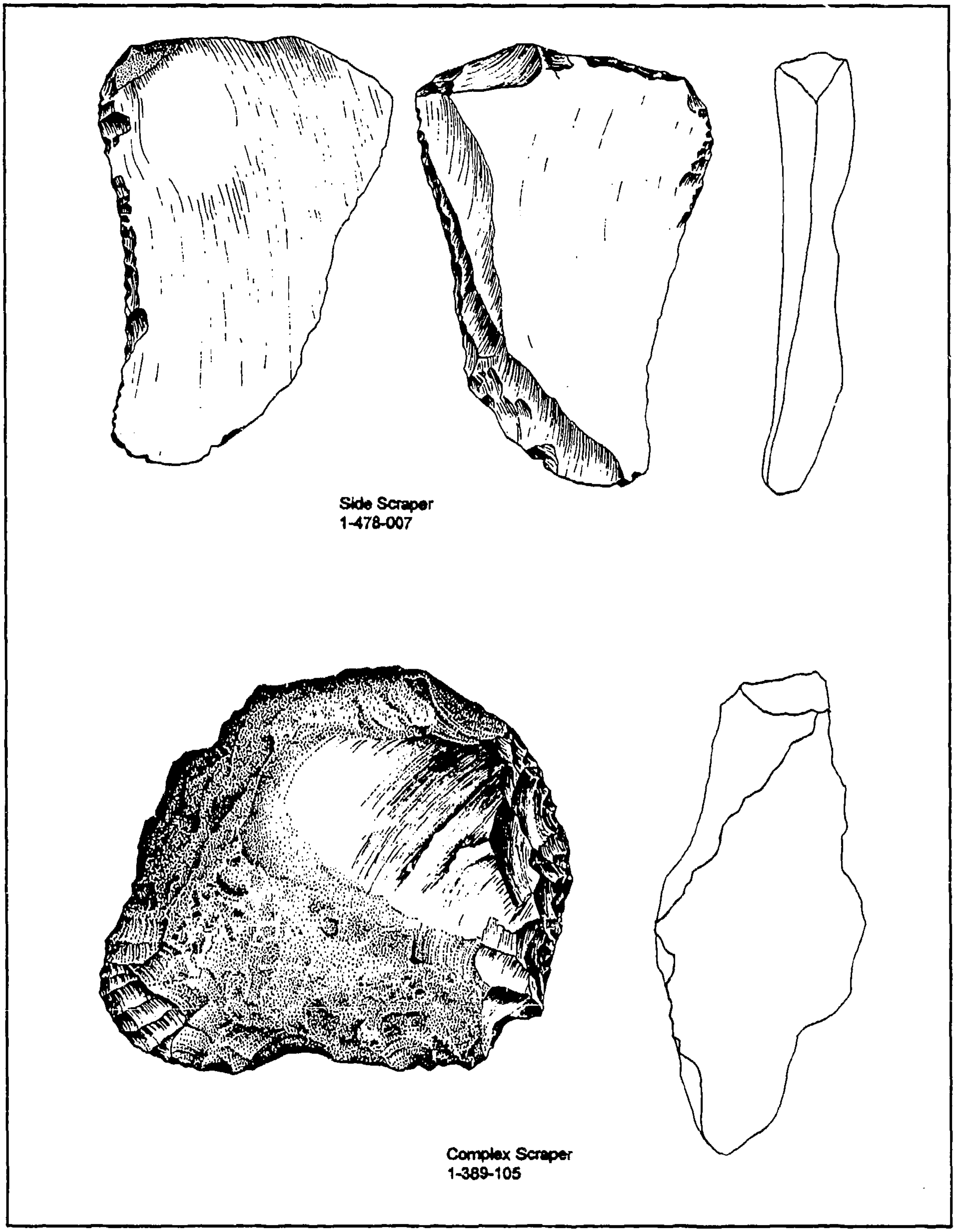
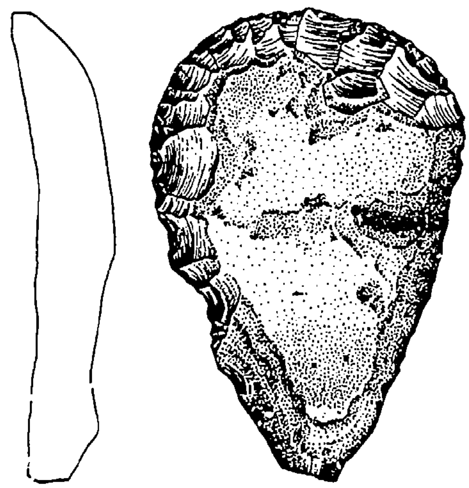
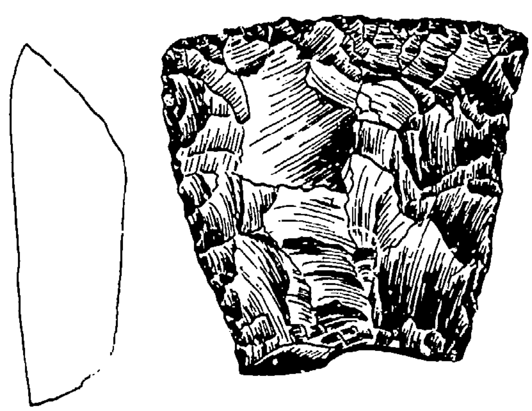


Figure 7.11 Selected Scraping and Woodworking Tools (Actual Size).



End Scraper
1-317-319



Clear Fork Type A
1-1060-070

Figure 7.12 Selected Scraping Tools (Actual Size).

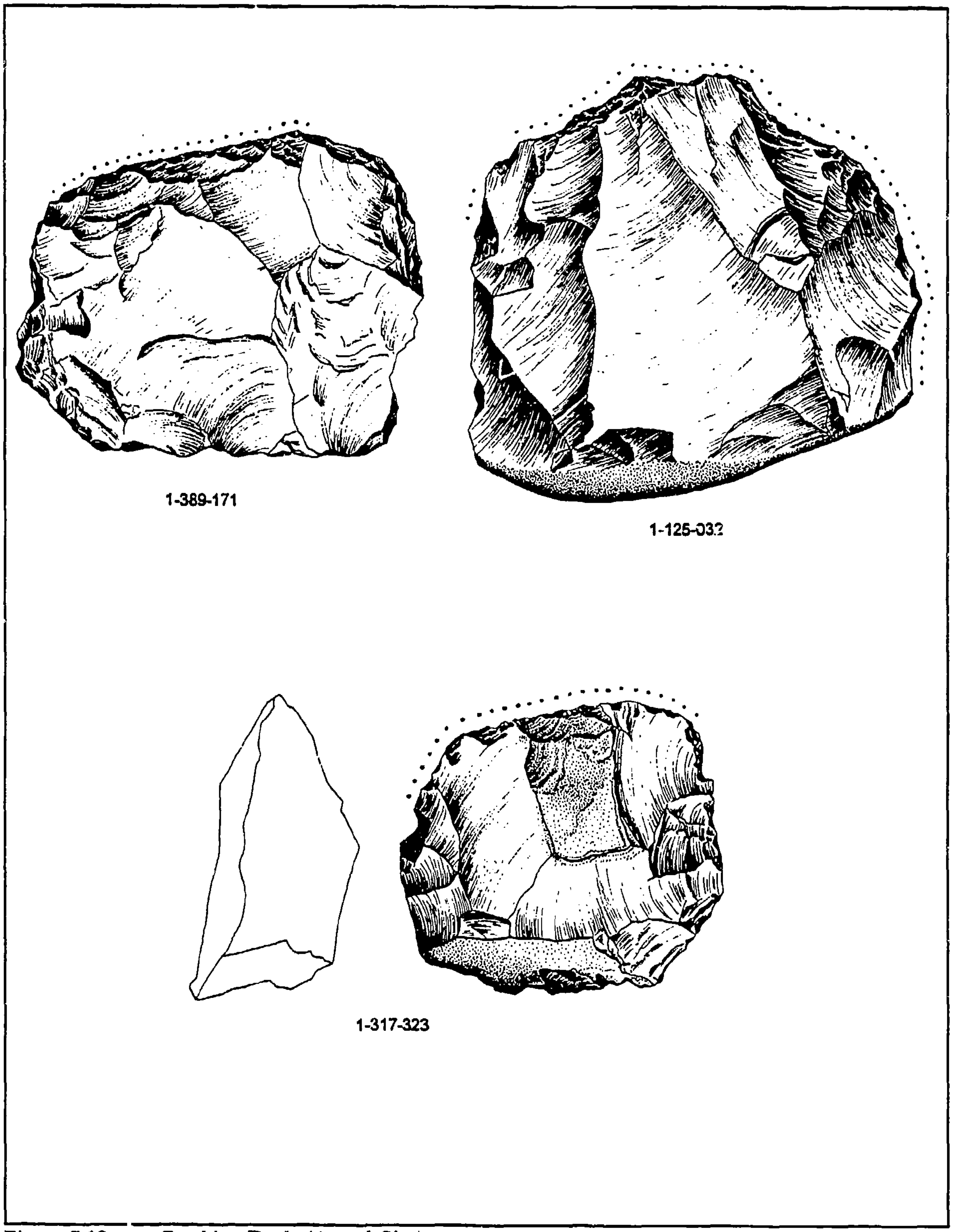


Figure 7.13 Crushing Tools (Actual Size).

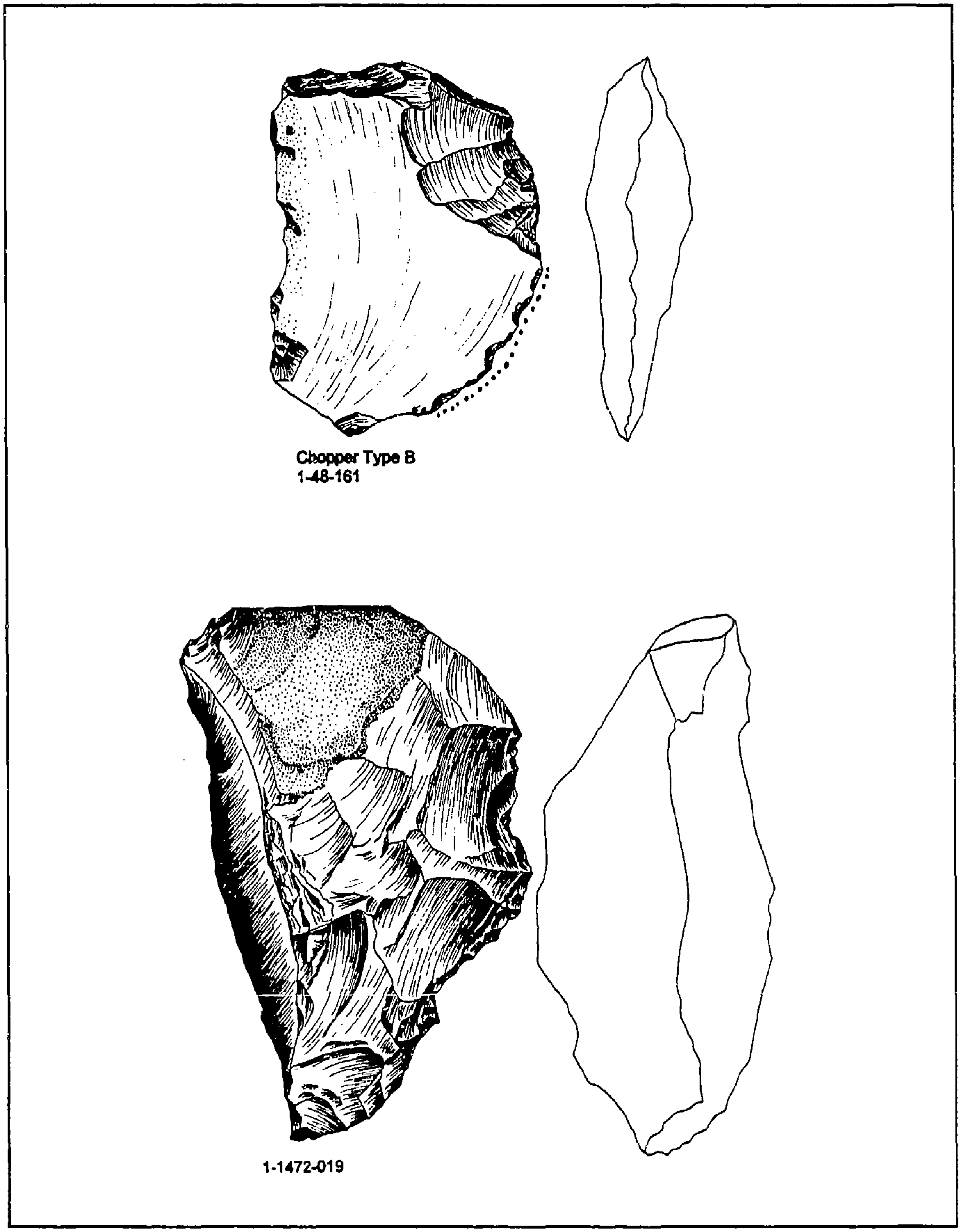


Figure 7.14 Selected Chopping Tool (top) and Crusher/Batterer (bottom) (Actual Size).

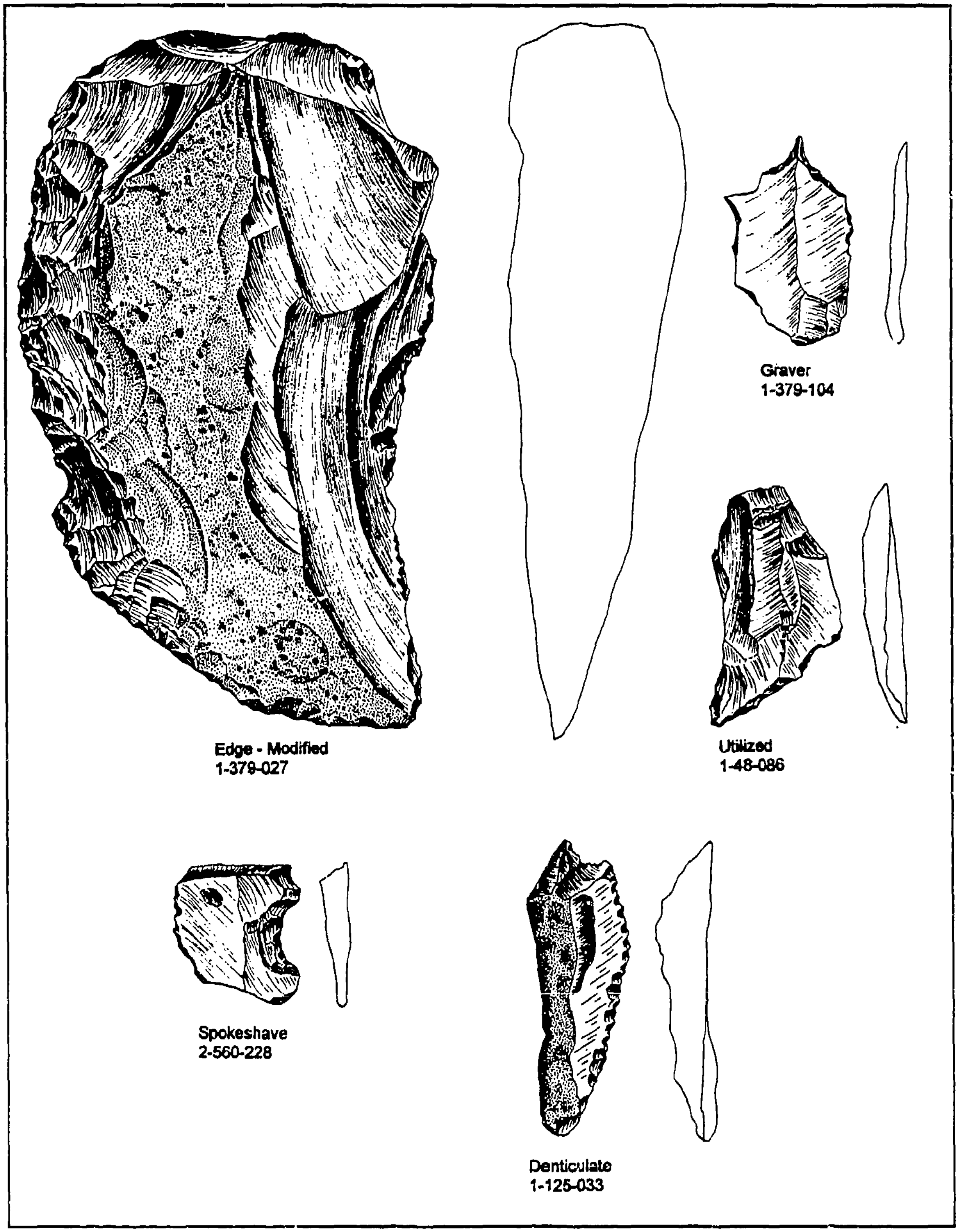


Figure 7.15 Selected Modified Edge Tools (Actual Size).

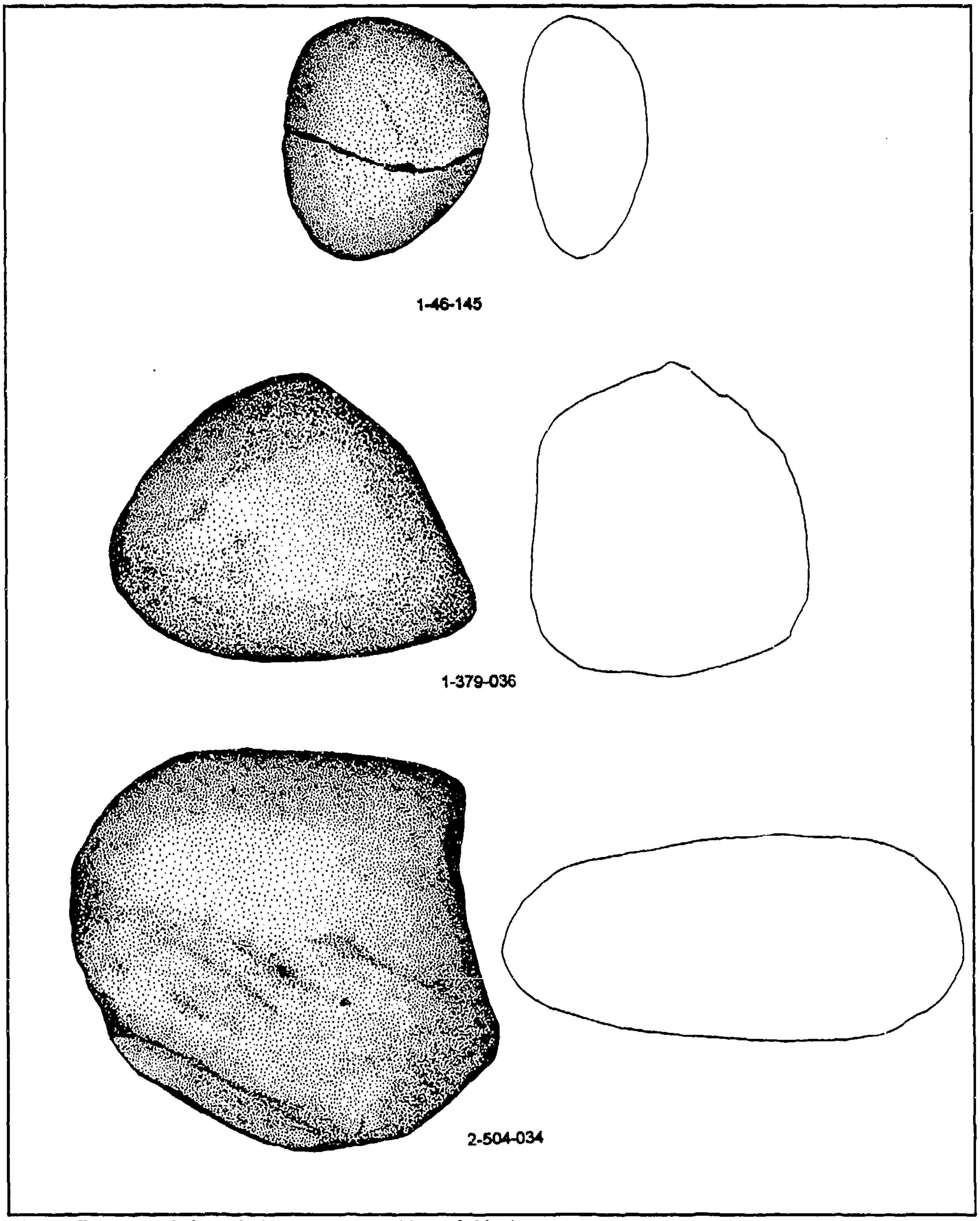


Figure 7.16 Selected Hammerstones (Actual Size).

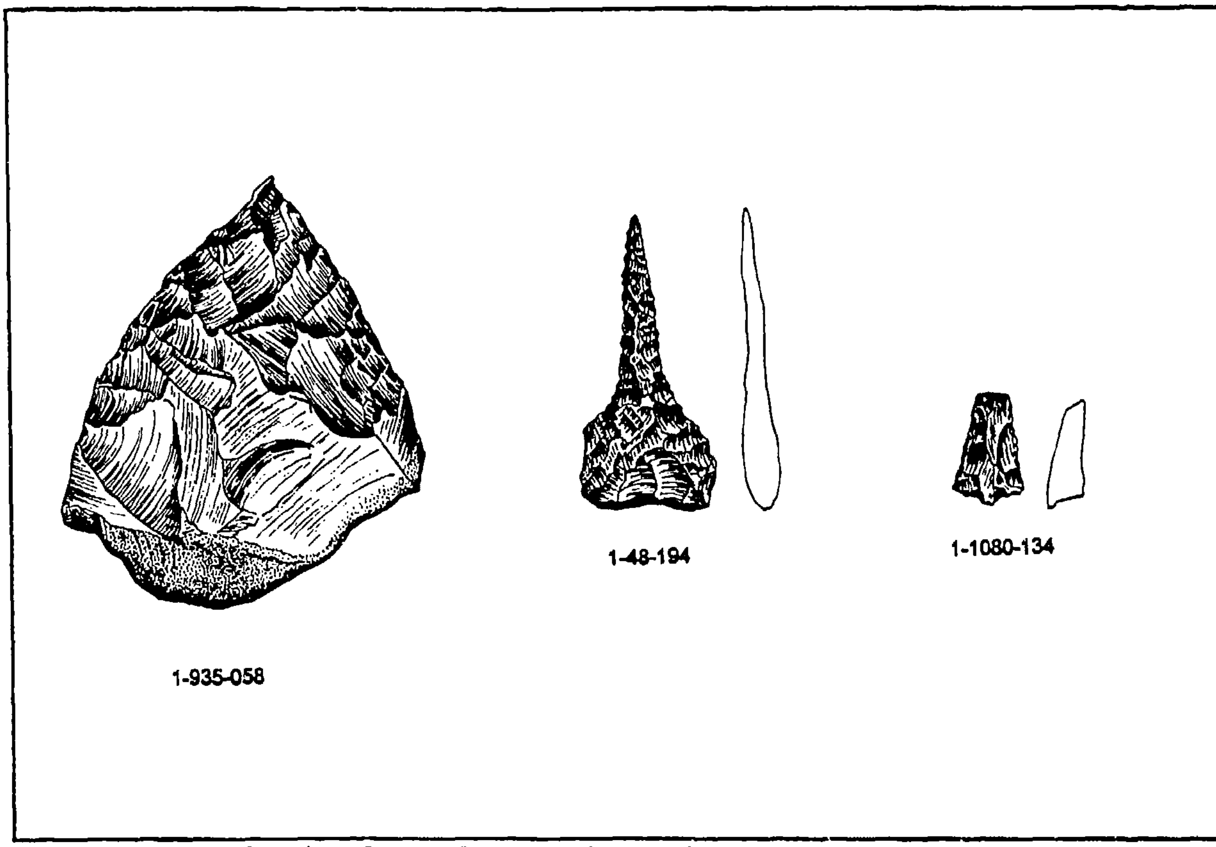


Figure 7.17 Selected Perforator Types: Awl and Drills (Actual Size).

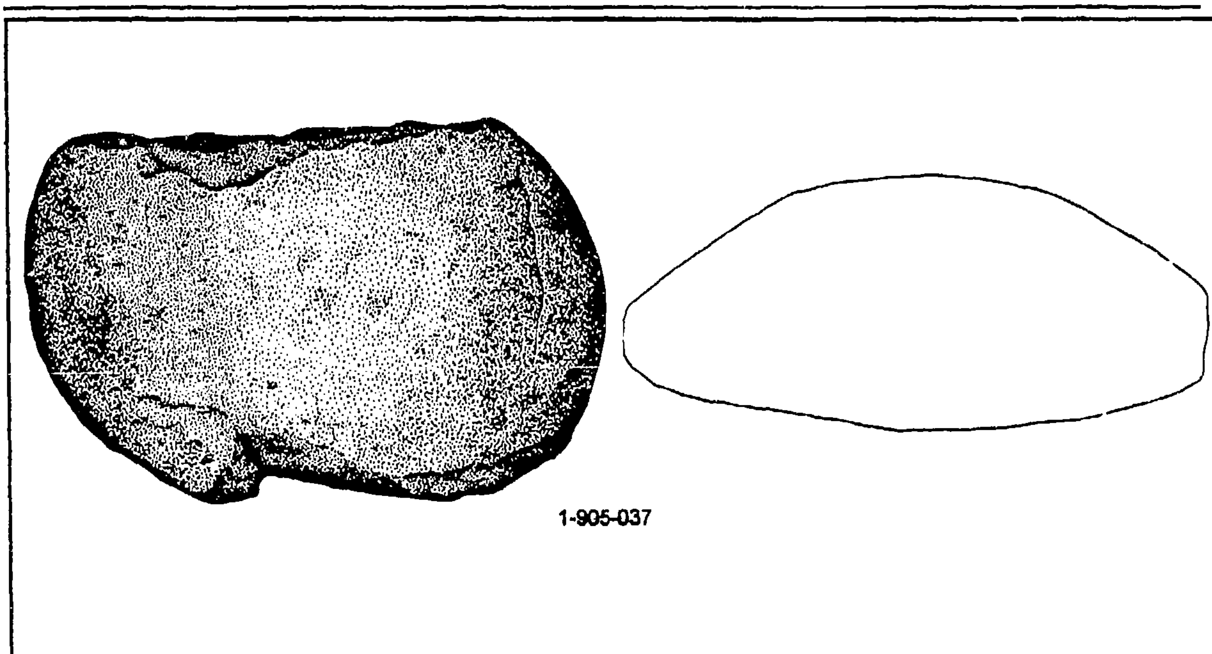


Figure 7.18 Mano (Actual Size).

of 72 expedient tools to a single denticulate specimen. Other than the high amount of unidentifiable cherts, most tools were made of Heiner Lake Tan (n=32), an indeterminate light brown chert has the second highest tool frequency at 25 specimens.

The East Cowhouse site group has nine types of tools for a total of 43 specimens. Twenty-four of these are identifiable chert (56%); of the five cores, four are identifiable chert (Appendix G, Table 50). The tools range from a high of 25 expedient tools to single specimens of four different kinds of tools. Other than the indeterminate cherts (n=19) the Southeast Range materials contribute the most tools at 15, with Heiner Lake Tan and Heiner Lake Translucent Brown the most prevalent chert types.

The Cowhouse/Taylor/Bear site group has nine types of tools for a total of 43 specimens. Of these, 21 are of identifiable chert (49%), and of the five cores, two are identifiable chert (Appendix G, Table 51). The tools range from a high of 24 expedient tools to single specimens of three different kinds of tools. Other than the indeterminate cherts (n=21), the Southeast Range materials contribute the most tools at 13 with Heiner Lake the most prevalent.

The Owl Creek site group has 17 types of tools for a total of 462 specimens. Of these, 327 are identifiable chert (71%), and all 13 cores are of identifiable chert (Appendix G, Table 52). The tools range from a high of 305 expedient tools to a single end scraper. Probably due to the site group's location within the North Fort chert province, these cherts are the dominant materials used (n=249). The indeterminate cherts are as common as the North Fort materials and are twice as common as the Southeast Range materials. Individually, Gray/Brown/Green (n=118) is the dominant chert used for tools in this site group, followed by Fort Hood Yellow (n=81) and Heiner Lake Tan (n=54).

The East Henson site group has eight types of tools for a total of 14 specimens. Ten of these are identifiable chert (71%). Both cores are of identifiable chert (Appendix G, Table 53). The tools are fairly evenly distributed among the eight types. The choice of chert type also has no clear pattern with North Fort cherts having a slight dominance.

The Shoal/Turnover site group has 14 types of tools for a total of 63 specimens. Of these, 31 are identifiable chert (46%) and four of the six cores are identifiable chert (Appendix G, Table 54). The tools range from a high of 33 expedient tools to single specimens of seven tool types, including a mano and a metate. Other than the indeterminate chert types, no chert province or specific material type dominates the assemblage, but North Fort and Southeast Range materials are close secondary preferences. Individually, Fort Hood Yellow is the most prevalent material.

The Shell Mountain site group has 23 types of tools for a total of 433 specimens. Of these, 241 are identifiable chert (56%). Of the 18 cores, all but seven are of identifiable chert (Appendix G, Table 55). The tools range from a high of 191 expedient tools to single specimens of five tool types. The indeterminate cherts (n=191) dominate the assemblage with the Southeast Range (n=132) and North Fort (n=64) materials as secondary choices. Individually, Heiner Lake Tan chert is the dominating chert type for tools with 110 specimens.

The Stampede site group has 11 types of tools for a total of 22 specimens. Nine of these are identifiable chert (41%); no cores are present (Appendix G, Table 56). The tools range from a high of seven expedient tools to single specimens of four tool types. Other than the indeterminate chert types, no chert province or specific material type dominates the assemblage.

The West Cowhouse site group has 17 types of tools for a total of 292 specimens. Of these, 176 are identifiable chert (60%). Of the 21 cores, all but six are of identifiable chert (Appendix G, Table 57). The tools range from a high of 139 expedient tools to a single preform. The indeterminate cherts dominate the assemblage with the Southeast Range and Cowhouse materials as secondary choices. Individually, Heiner Lake Tan chert is the most prevalent chert type for tools followed by Cowhouse Mottled with Flecks (an "anal·‥" type).

The Table Rock site group has 11 types of tools for a total of 53 specimens. Twenty-five of these are identifiable chert (51%), plus one core of Cowhouse chert (Appendix G, Table 58). The tools range from a high of 23 expedient tools to single specimens of formal scraper types and single specimens of ground stone types. Other than the indeterminate cherts, as a whole no chert province dominates the assemblage. However, seven tools are made of Southeast Range Heiner Lake Tan chert. The ground stone mano and metate are both of limestone.

The Turkey Run site group has eight types of tools for a total of 35 specimens of which 13 are identifiable chert (37%), and two are identifiable chert cores (Appendix G, Table 59). The tools range from a high of 18 expedient tools to a single spokeshave and an unclassified biface. Other than the indeterminate cherts as a whole no chert province dominates the assemblage. However, six tools are made of Southeast Range Heiner Lake Tan chert.

7.2.3 Interpretations of Breakage Patterns

The revised tool typology, as also applied to our previous collections, included the classification of tools into complete or fragmentary pieces and the determination of a breakage type. The aim of these attributes was to determine whether the artifact broke during manufacture or during use; impact breaks on projectile points (recovered from habitation sites) suggest that the hunters were retrieving the foreshafts of spears or the arrows so as to fashion new points. A total of 555 points and 647 non-point tools are included in our sample (Table 7.11). Ten classifications of breakage type were used. The classification of breaks were divided into manufacture and use. End-shock, notch, *outrépas* and perverse breaks are considered manufacture failures, while end shock/impact, impact and burinated breaks are considered use fractures. However, most specimens could not be classified; more than 200 specimens had no breaks, more than 400 had indeterminate break types, and an additional 32 specimens had evidence of burning that obscured the type of break.

Of the points with a definite break type, roughly half of the breaks are due to manufacture and half to use (Figure 7.19). This indicates that at least some of the points broken during use were curated for refurbishing. However, few of the points have evidence of being reworked (n=72, 13%). The non-point tools give a better indication of the success of the reduction strategy used for biface manufacture. The percentage of perverse and end-shock breaks increase throughout the biface reduction sequence (7% to 34% and 12% to 17%, respectively) (Figure 7.20). Although a higher rate of breakage is expected as the specimen becomes thinner, it is also an indication of the disposal of broken specimens at their manufacture site. One of the drills has an end-shock break that may be due to use and not manufacture (considering the end stress typical of drill use). Although three tools have impact breaks, but they were probably not used as projectiles. The blade and stem fragment types compares well to the number of impact related breaks at 88% supporting the

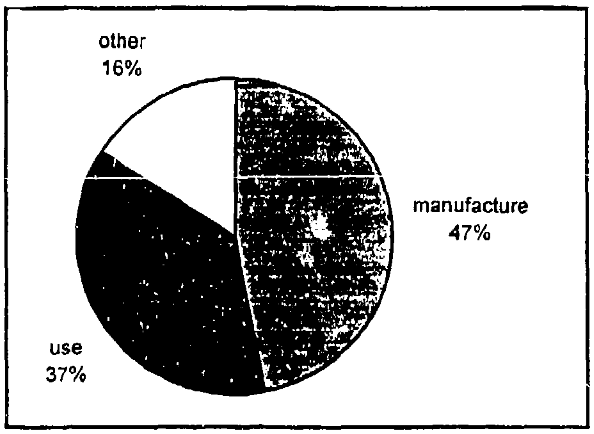


Figure 7.19 Graphic Representation of the Relative Percentages of Break Types for Projectile Points.

Table 7.11 Breakage Types by Type of Lithic Tool.

Lithic Point	Breakage Type											
Fragment Type	Burinated	Burned	end shock/imp	End-shock	Impact	Indeterminate	None	Notch	Other	outrepas	Perverse	Total
Barb	0	0	0	0	0	1	0	0	0	0	0	1
Barb only	0	0	0	0	0	1	0	0	0	0	0	1
Base only	0	0	0	1	0	2	0	0	0	0	0	3
Blade and stem	1	0	0	7	44	40	1	0	9	0	23	125
Blade only	0	0	0	4	2	11	0	0	0	0	1	18
Complete	0	2	0	1	0	23	83	1	6	0	0	116
Distal	0	2	0	17	3	29	0	0	0	0	19	70
Indeterminate	0	1	0	0	0	0	0	0	0	0	0	1
Longitudinal segment	0	3	0	0	5	2	0	0	0	0	0	10
Medial	1	2	1	9	2	14	0	0	0	0	7	36
Other	0	0	0	0	0	0	0	0	0	0	1	1
Part of blade & stem	0	7	0	5	23	30	1	0	6	0	5	77
Proximal	0	1	0	11	13	28	0	0	3	0	5	61
stem and barb	0	0	0	0	0	0	0	0	0	1	0	1
Stem only	0	0	0	2	5	15	0	0	1	0	9	32
tang only	0	0	0	0	0	2	0	0	0	0	0	2
Subtotal	*2*	*18*	*1*	*57*	*97*	*198*	*85*	*1*	*25*	*1*	*70*	*555*
Lithic Tool												
Complete	0	0	-	0	0	0	134	-	4	0	4	142
Distal	1	5	-	28	0	35	0	-	3	2	59	133
Indeterminate	0	4	-	13	0	36	0	-	1	2	16	72
Longitudinal segment	0	0	-	1	0	11	0	-	1	0	3	16
Medial	0	4	-	26	1	38	0	-	3	0	23	95
Proximal	0	0	-	23	2	69	1	-	3	7	49	154
wedge section	0	1	-	6	0	17	0	-	1	0	10	35
Subtotal	*1*	*14*	-	*97*	*3*	*206*	*135*	-	*16*	*11*	*164*	*647*
Total	**3**	**32**	**-**	**154**	**100**	**404**	**220**	**-**	**41**	**12**	**234**	**1202**

curation of broken projectiles. Of note also is the number of proximal and distal fragments with end-shock breaks. For the tools manufacture break seems to be evenly distributed across the fragment types. This is not unexpected since specimens will often break into three pieces.

7.2.4 Bone Tools and Modified Shell

The two testing phases recovered a total of 16 bone tools from nine sites (Table 7.12). Only four specimens could be classified, with the remaining 14 artifacts being indeterminate tools. The four classified bone tools include a needle from 41CV1167 and three awls from sites 41BL821, 41CV137, and 41CV389. The majority of the bone tools are ground or slightly polished long bone sections of either deer or unknown mammals.

Four modified shell artifacts were recovered during the testing phases. These include one mussel shell, one whelk, and two *Rabdotus* snails from three

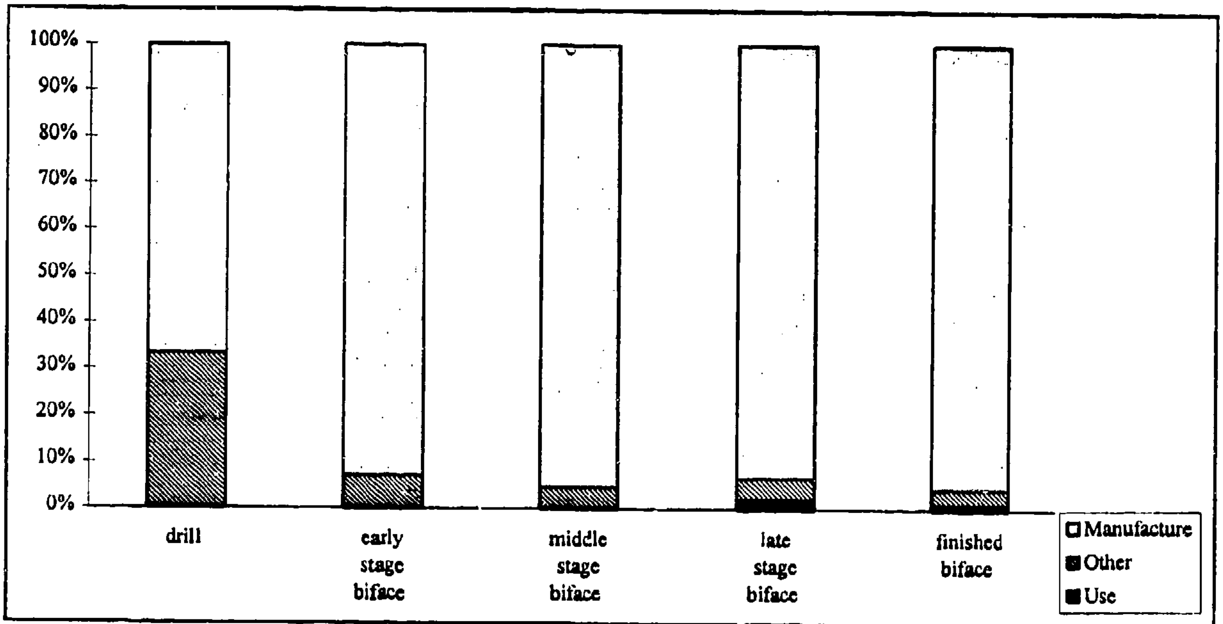


Figure 7.20 Graphic Representation of the Relative Percentages of Break Types of Bifacially Reduced Non-projectile Point Types.

sites. The decorated snail shells have been described and illustrated in Chapter 5.0. The previously recovered pendant (catalog no. 1-1007-056) resembles specimens associated with the Texas coast, both in form and its adhering orange resin (see previous discussions in Abbott and Trierweiler 1995:511). The recent phase of testing produced a fragment of a second shell pendant (catalog no. 1-48-294). It is of an unknown bivalve taxon with approximately half of the drilled hole remaining. It's thickness tapers from the center hole towards the margins, but its actual shape can not be determined.

7.2.5 Ceramics

During the previous testing phase, 55 ceramics were recovered from three sites (Table 7.13). Most are from one partially reconstructible Leon Plain vessel (catalog no. 1-174-284, 41CV174). Three other sherds were collected from site 41CV174 and represent at least two vessels. These sherds are not similar to the partially reconstructible vessel in workmanship. However, because petrographic analysis found them to be sand and bone tempered, they probably belong to the Leon Plain tradition. Two other tested sites yielded a single sherd each. The sherd from 41CV1038 is of bone temper and probably of Leon Plain origin. The sherd from 41CV960 is grog-tempered and is likely of East Texas Caddoan origin or a related tradition. Supporting petrographic data are presented in Table 7.14.

Nine additional ceramic sherds were recovered (all from site 41CV48) and are small body parts. Two different vessels are present based on temper and exterior surface modification. Petrographic analyses identified one sherd as Leon Plain. The other eight sherds exhibit lightly brushed exteriors with different tempering agents and are not presently typed. One of these was petrographically examined and found to contain grog temper. It is possible that this sherd is either from an East Texas trade vessel or is of the Central Texas variety Boothe Brushed (Suhm 1955) patterned after these types. These ceramics give evidence of a Toyah occupation and either an East Texas influenced Toyah group or an actual utilization of the Fort Hood area by an East Texas group.

Table 7.12 Provenience and Attribute Listing for Bone Tools and Modified Shell Artifacts.

Site	Catalogue No.	Unit	N	Taxon	Taxon Size	Element	Type
				Bone Tools			
41BL154	2-154-419	TP3, Lvl 5	1	Artiodactyla	Medium	Unknown	Indeterminate
41BL154	2-154-299	TP4, Lvl 23	1	Mammalia	Unknown	Unknown	Indeterminate
41BL821	2-821-291	TP1, Lvl 5	1	*Odocoileus* sp.	Medium	Unknown	Indeterminate
41BL821	2-821-303	TP1, Lvl 7	1	Vertebrata	Unknown	Unknown	Awl
41BL821	2-821-472	TP2, Lvl 3	1	Mammalia	Unknown	Unknown	Indeterminate
41BL886	2-886-178	TP5, Lvl 4	1	Vertebrata	Unknown	Unknown	Indeterminate
41CV97	1-97-141	TP4, Lvl 2	1	Mammalia	Small/medium	Unknown	Indeterminate
41CV97	1-97-1196	TP1, Lvl 5	1	Mammalia	Unknown	Unknown	Indeterminate
41CV97	1-97-670	BT , Lvl 30	1	*Odocoileus* sp.	Medium	Unknown	Indeterminate
41CV115	1-115-024	TP3, Lvl 6	1	*Odocoileus* sp.	Medium	Ulna	Indeterminate
41CV137	1-137-328	TP2, Lvl 10	1	Artiodactyla	Medium	Unknown	Indeterminate
41CV137	1-137-327	TP2, Lvl 11	1	Mammalia	Unknown	Unknown	Awl
41CV137	1-137-326	TP1, Lvl 11	1	Vertebrata	Unknown	Unknown	Indeterminate
41CV389	1-389-303	TP2, Lvl 3	1	Mammalia	Large/very large	Long bone	Awl
41CV587	1-587-031	TP1, Lvl 7	1	Mammalia	Unknown	Unknown	Indeterminate
41CV1167	1-1167-110	TP1, Lvl 4	1	Mammalia	Unknown	Unknown	Needle
				Modified Shell			
41CV48	1-48-294	TP2, Lvl 5	1	Unknown Bivalve	n/a	n/a	Pendant
41CV935	1-935-051	TP2, Lvl 1	1	*Rabdotus* sp.	n/a	n/a	Decorative
41CV935	1-935-070	TP2, Lvl 2	1	*Rabdotus* sp.	n/a	n/a	Decorative
41CV1007	1-1007-056	TP1, Lvl 5	1	*Busycon* sp.	n/a	n/a	Pendant

Table 7.13 Provenience and Attribute Listing for Prehistoric Ceramics.

	Bone Tempered Pastes					Grog Tempered Pastes	
Sample No.	1-174-061	1-174-284	1-174-203	1-1038-167	1-48-287	1-960-211	1-48-520
Point Count	200	200	200	200	-	200	-
Clay	43%	63%	69%	64%	55%	63%	55%
Pores	8%	6%	1%	6%	9%	2%	11%
Non-Plastics	49%	31%	30%	30%	36%	35%	34%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Identified Non-Plastics							
Alkaline Feldspars	-	-	-	-	-	-	*
Quartz	43%	26%	23%	20%	42%	74%	35%
Orthoclase Feldspar	-	3%	-	3%	-	3%	-
Plagioclase Feldspar	-	-	-	-	-	-	-
Mica	-	-	-	-	-	-	-
Biotite	-	1%	-	-	-	-	-
Calcite	-	13%	-	-	-	-	-
Chert	-	-	-	1%	-	-	-
Hematite	-	-	10%	17%	6%	-	6%
Bone	47%	39%	47%	53%	50%	-	*
Grog	-	-	-	-	-	23%	59%
Organic	-	-	-	-	-	-	-
Subtotal	*90%*	*82%*	*80%*	*94%*	*97%*	*100%*	*100%*
Unidentified Non-Plastics							
Sedimentary Rock Fragment	-	-	-	-	3%	-	-
Sedimentary Silt w/ Calcite	10%	19%	20%	3%	-	-	-
Sedimentary Silt w/o Calcite	-	-	-	3%	-	-	-
Subtotal	*10%*	*19%*	*20%*	*7%*	*3%*	*0%*	*0%*
Total	**100%**	**101%**	**100%**	**101%**	**100%**	**100%**	**100%**
Distribution of Grain Sizes							
Very fine Silt, 0.0039-0.0078	-	-	-	-	10%	-	5%
Fine Silt, 0.0078-0.0156	10%	0%	10%	10%	30%	0%	10%
Medium Silt, 0.0156-0.031	0%	10%	20%	10%	25%	20%	30%
Coarse Silt, 0.031-0.0625	20%	30%	10%	0%	35%	20%	20%
VF Sand, 0.0625-0.125	20%	10%	0%	0%	0%	50%	35%
Fine Sand, 0.125-0.25	10%	40%	20%	20%	-	0%	-
Medium Sand, 0.25-0.5	10%	10%	10%	30%	-	0%	-
Coarse Sand, 0.5-1.0	20%	0%	30%	30%	-	10%	-
Very Coarse Sand, 1.0-2.0	10%	0%	0%	0%	-	0%	-
Granule, 2-4	0%	0%	0%	0%	-	0%	-
mode	coarse silt; very fine sand	fine sand	coarse sand	medium-coarse sand	-	very fine sand	-
average	0.415 mm	0.119 mm	0.300 mm	0.380 mm	-	0.119 mm	-

*noted in general scan, but not included in point count

Table 7.14 Petrograhic Data for Prehistoric Ceramics.

Site	Cat. No.	Unit	N	Ware Type	Vessel Form	Sherd Form	Firing Atmosphere	Thickness (mm)	Color			Surface Treatment
									Interior	Exterior	Core	
CV0048	1-48-158	TP2, Lvl 3	1	Other	Indet	Body	Oxidized	8.82	7.5YR7/2	varies between 10R6/8 through 2.5YR6/8	*	Int.: smoothed and eroded; Ext: brushed
CV0048	1-48-287	TP2, Lvl 4	1	Plain	Jar-Olla	Body	Oxidized	5.9	5YR 8/2	5YR 6/6	*	Int.: smoothed and eroded; Ext: burnished
CV0048	1-48-292	TP2, Lvl 5	5	Brushed	Indet	Body	Inc. Oxidized	9.16	5YR 3/1	5YR 7/4	10R 5/8	Int.: smoothed and eroded; Ext: brushed
CV0048	1-48-520	TP2, Lvl 6	1	Brushed	Indet	Body	Oxidized	8.82	5YR 7/2	2.5YR 6/6	10R 5/8	Int.: smoothed and eroded; Ext: brushed
CV0048	1-48-327	TP2, Lvl 6	1	Brushed	Indet	Body	Oxidized	9.58	5YR 7/3	5YR 7/2	10R 5/8	Int.: smoothed and eroded; Ext: brushed
CV0174	1-174-061	TP3, Lvl 2	1	Unknown	Indet	Body	Reduced	6.05	7.5YR5/4	5YR4/6	5YR4/1	Polished
CV0174	1-174-203	TP6, Lvl 1	1	Unknown	Indet	Body	Inc. Oxidized	5.72	10YR8/3	7.5YR6/2	7.5YR5/2	Polished & eroded
CV0174	1-174-203	TP6, Lvl 1	1	Unknown	Indet	Body	Inc. Oxidized	4.75	5YR8/2	5YR6/4	5YR4/1	Polished & eroded
CV0174	1-174-284	BT5, Lvl 3	47	Leon Plain	Jar-Olla	Body and base	Inc. Oxidized	7.5	5YR6/8	10YR7/4	5YR5/1	Polished
CV0174	1-174-284	BT5, Lvl 3	3	Leon Plain	Jar-Olla	rim	Inc. Oxidized	3.2	5YR6/8	10YR7/4	5YR5/1	Polished
CV0960	1-960-211	TP5, Lvl 2	1	Unknown	Indet	Body	Inc. Oxidized	5.01	7.5YR5/4	7.5YR5/4	7.5YR5/2	Polished
CV1038	1-1038-167	surface	1	Unknown	Jar-Olla	Body	Inc. Oxidized	7.25	5YR7/6	2.5YR4/6	5YR6/1	Polished & eroded

* no core color taken -- sherd too small to make fresh break

8.0 FEATURES

James T. Abbott, Karl Kleinbach, and Gemma Mehalchick

In this chapter we address the cultural features we investigated on Fort Hood during all three phases of NRHP eligibility testing. Although additional features were noted on a number of sites, only those features that were discovered in or investigated by an excavation unit are addressed in the following discussion. This discussion represents an expansion of the feature discussion in the report of Phase I excavations (Kleinbach et al. 1995), and the thrust of the basic arguments is the same. The database drawn on to advance the arguments however, is considerably expanded.

Although the definition of an archeological feature may vary (Kleinbach et al. 1995), for purposes of this report, the term "feature" refers to "nonportable objects, object clusters, or sediment anomalies which are most often attributed to fairly discrete cultural behaviors" (Trierweiler 1994). The following discussion draws heavily on the feature typology developed previously during the reconnaissance-evaluation phase of work on Fort Hood (Trierweiler 1994:Appendix E) and modified in the previous testing report (Abbott and Trierweiler 1995). The terms in this typology are presented graphically in Figure 8.1, organized according to type and material. One type--diffuse burned rock scatters--originally defined as a feature type were not treated as such during the testing investigations because 1) scattered burned rock is nearly ubiquitous on archeological sites on Fort Hood, and 2) typically appears to reflect natural disturbance of a site rather than a direct result of human activity. Four additional feature types--human burial, post mold/burned post, pit depression, and bone bed--have been added to the list. Not all of the feature types included in the typology were identified at the 119 sites addressed in this study; those types that were encountered, and are therefore addressed below, are indicated in bold type in the figure. For definitions of the feature types that were not encountered, see Trierweiler (1994).

Investigation of burned rock features has been a primary focus of Central Texas archeology for better than seventy years. This scrutiny is not unwarranted, because with the exception of stray projectile points and frequently ubiquitous scatters of lithic debitage, burned rock features form the most obvious and pervasive type of prehistoric cultural manifestation in the region. Unsurprisingly, the majority of features investigated at the 119 sites addressed here were composed partially or wholly of burned rock, and the following discussion therefore emphasizes them. A total of 73 large burned rock features (mounds and middens), 47 burned rock concentrations, 4 burned rock pavements, and 62 hearths containing or constructed of burned rock were documented. Of these 186 features, 163 were either partially or wholly excavated with a manual unit. The majority (74%) of the defined but untested burned rock features were concentrations, while 13% were middens and 13% were rock-filled hearths. In addition, seven hearth features lacking rock and a small number of other cultural feature types were discovered, including ash lenses and ash/charcoal stains (n=3), human burials (n=2), pit depressions (n=1), mussel shell middens (n=1), caches (n=2), post molds (n=1), mussel shell lenses (n=1), and occupation zones (n=2). Finally, a few natural or historic features were also defined. Each feature type is discussed in turn below.

8.1 BURNED ROCK MOUNDS, MIDDENS, CONCENTRATIONS, AND PAVEMENTS

The burned rock features encountered during this testing phase were separated into the following categories: mounds, middens, concentrations, pavements, and hearths. These categories were based primarily on morphology and associated cultural remains, and are defined below. However, as Figure 8.1 indicates, not all hearth features

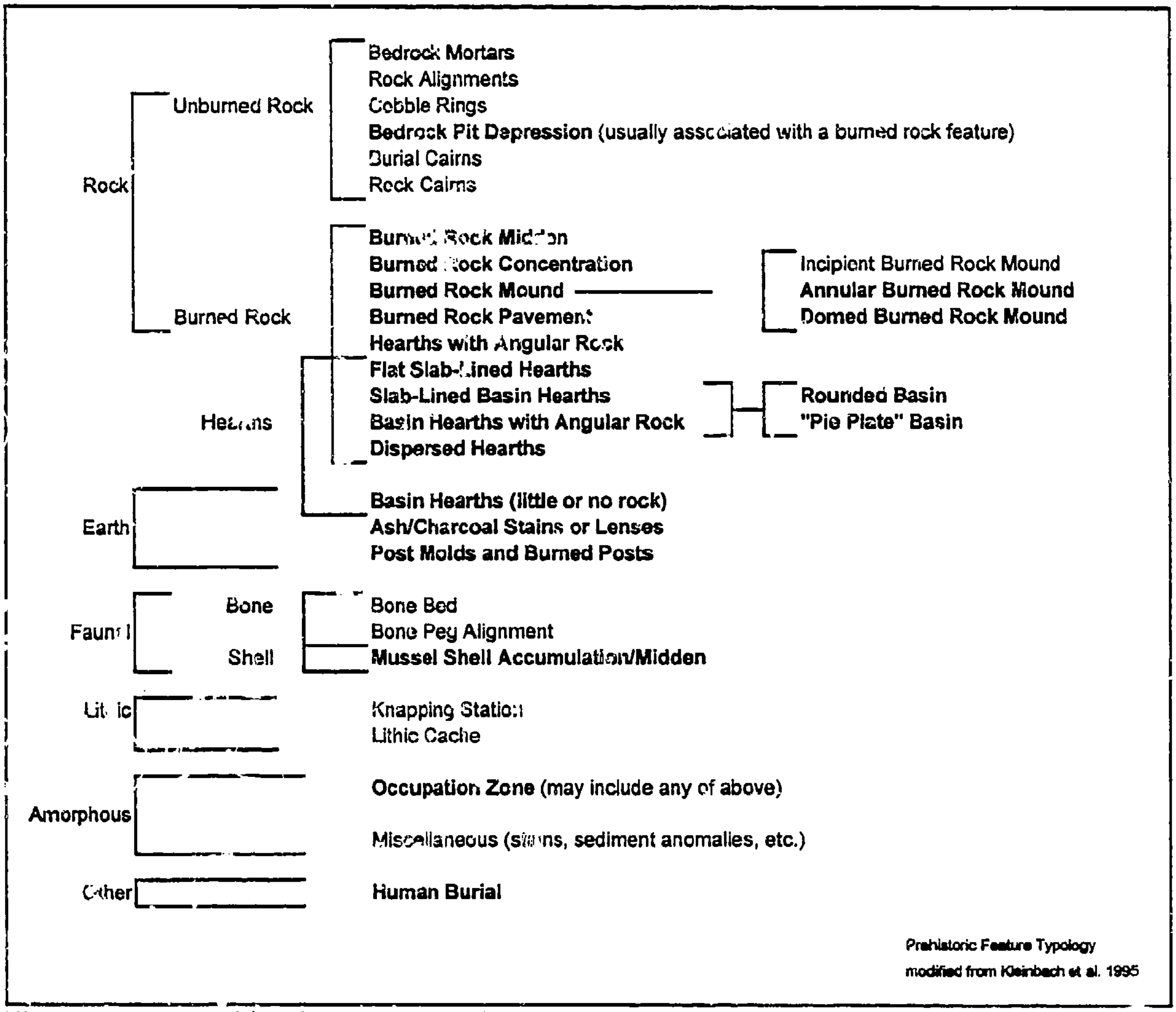


Figure 8.1 Prehistoric Feature Typology (feature types in bold were documented during the test phase).

included burned rock. For this reason, discrete hearths are treated separately in Section 8.1.2, and the following discussion is limited to mounds, middens, concentrations, and pavements. Table 8.1 presents basic dimensions and environmental settings of the large burned rock features that were addressed on the 119 sites.

The distinction drawn here between burned rock mounds and burned rock middens is not commonly accepted in the Texas archeological community. Rather, all such features are usually termed "burned rock middens." As discussed at length in the previous report (Kleinbach et al. 1995), the origin of this terminology can be traced back to Alex Krieger, who argued that the term "mound" should be reserved for intentionally constructed features like Caddoan burial mounds (1945:41-51). Our decision to differentiate between "mounds" (features with clear relief relative to the surrounding landscape) and "middens" (features lacking such relief) arose from our perception, developed through the course of conducting reconnaissance-level evaluations of almost 600

Table 8.1 Classification, Dimensions, and Environmental Setting of Burned Rock Mounds, Burned Rock Middens, Burned Rock Concentrations, and Burned Rock Pavements.

Site	Fea. No.	Feature Type	Estimated Size length (m)	Estimated Size width (m)	First Test Unit	First Test Depth (cmbs)	Second Test Unit	Second Test Depth (cmbs)	Third Test Unit	Third Test Depth (cmbs)	Topographic Setting	Location	Comments
41BL154	3	BR Concentration	7	3	4	125-137	-	-	-	-	T1	North Nolan Creek valley	Spring on Site. 2 Rockshelters on Site
41BL415	2	BR Concentration	0.74	0.56	4	19-26	-	-	-	-	Pleistocene Terrace	Cowhouse Creek	-
41CV88	3	BR Concentration	0.6	0.41	2	64-70	-	-	-	-	T1A	Confluence of Cowhouse and Cottonwood	-
41CV88	4	BR Concentration	0.47	0.24	2	122-129	-	-	-	-	T1A	Confluence of Cowhouse and Cottonwood	-
41CV95	1	BR Concentration	15	15	1	surface only	-	-	-	-	T1	Cowhouse Creek terrace	-
41CV95	2	BR Concentration	20	20	BT 3	surface only	-	-	-	-	T1	Cowhouse Creek terrace	-
41CV95	6	BR Concentration	not estimated		5	91 - 97	-	-	-	-	T1	Cowhouse Creek terrace	-
41CV95	9	BR Concentration	1	0.6	5	139 - 155	-	-	-	-	T1	Cowhouse Creek terrace	-
41CV97	6	BR Concentration	0.9	0.9	8	22 - 38	-	-	-	-	T1A	Cowhouse Creek terrace	-
41CV97	8	BR Concentration	not estimated		8	68 - 76	-	-	-	-	T1A	Cowhouse Creek terrace	-
41CV97	14	BR Concentration	not estimated		10	258 - 272	-	-	-	-	T1B	Cowhouse Creek terrace	-
41CV115	2	BR Concentration	8	3	3	65-80	-	-	-	-	Rockshelter	Between Turnover and Shoal Creeks	-
41CV174	9	BR Concentration	2	2	6	50 - 80	-	-	-	-	T1B	Table Rock Creek	-
41CV184	2	BR Concentration	7	3	2	185-220	-	-	-	-	T1B	South of Henson Creek	-
41CV319	2	BR Concentration	4	not est.	1	0 - 20	-	-	-	-	Upland; Paluxy Sand	Cowhouse/Table Rock Interfluve	-
41CV481	3	BR Concentration	0.4	0.4	1	252-268	-	-	-	-	Toeslope	South of Clabber Creek	-
41CV936	1	BR Concentration	7	5	2	20-27	-	-	-	-	Mid-slope Bench	West Slope of Manning Mountain	Below 41CV935 (Rockshelter)
41CV1007	2	BR Concentration	2	2	2	63 - 81	-	-	-	-	T1	Trib. of Two Year Old Creek	-
41CV1023	1	BR Concentration	2	1	1	surface only	-	-	-	-	Upland; Paluxy Sand	Above Stampede Creek	-
41CV1023	3	BR Concentration	3	3	3	9 - 21	-	-	-	-	Upland; Paluxy Sand	Above Stampede Creek	-
41CV1023	4	BR Concentration	1	0.5	2	0 - 10	-	-	-	-	Upland; Paluxy Sand	Above Stampede Creek	-
41CV1023	6	BR Concentration	3	3	4	5 - 15	-	-	-	-	Upland; Paluxy Sand	Above Stampede Creek	-
41CV1027	4	BR Concentration	10	10	5	0 - 40	-	-	-	-	Upland; Paluxy Sand	Above Stampede Creek	-
41CV1038	2	BR Concentration	25	15	BT 2	surface only	-	-	-	-	T1A	Cowhouse Creek terrace	-
41CV1038	5	BR Concentration	2	1	3	73 - 82	-	-	-	-	T1A	Cowhouse Creek terrace	-
41CV1098	1	BR Concentration	0.8	0.8	3	30 - 35	-	-	-	-	T1	Cowhouse Creek terrace	-
41CV1105	3	BR Concentration	0.8	0.8	2	167-185	5	175-181	-	-	T1	Cowhouse Creek terrace	-
41CV1136	1	BR Concentration	6	6	2	18 - 54	-	-	-	-	T1	Table Rock Creek and Trib.	-
41CV1136	4	BR Concentration	4.5	4.5	6	7 - 50	-	-	-	-	T0	Trib. of Table Rock Creek	-
41CV1200	1	BR Concentration	2	2	1	45 - 68	-	-	-	-	T1	Trib. of Cowhouse Creek	-
41CV1391	3	BR Concentration	1.5	0.8	6	99 - 106	-	-	-	-	T1	Trib. of House Creek	-
41CV1423	9	BR Concentration	1	1	3	20-55	7	50-57	-	-	High Pleistocene Terrace	Table Rock Creek	-
41CV1471	2	BR Concentration	1.2	1	1	119-126	-	-	-	-	T1	South of Turnover Creek	Associated with F1 (Hearth)
41BL154	1	BR Midden	150	50	1	0-110	3	0-70	-	-	Toeslope	North Nolan Creek valley	Spring on Site, 2 Rockshelters on Site
41BL339	4	BR Midden	1.8	1	4	140-170	-	-	-	-	T1B; in slough	Cowhouse Creek valley	-
41BL431	1	BR Midden	30	16	TP1	33-60	-	-	-	-	Toeslope	South Bank of Lake Belton	-
41BL513	1	BR Midden	25	10	1	0-94	2	36-52	-	-	T1; abuts Toeslope	Bear Creek valley	-
41BL740	1	BR Midden	80	20	2	0 - 35	-	-	-	-	Toeslope	Trib. of North Nolan Creek	Spring on Site, Sinkhole on Site
41BL740	2	BR Midden	5	3	5	20 - 50	-	-	-	-	Toeslope	Trib. of North Nolan Creek	Spring on Site, Sinkhole on Site
41BL751	1	BR Midden	60	20	1	10 - 100	-	-	-	-	T1; abuts Toeslope	Near Head of a Side Drainage	-

Table 8.1 Continued.

Site	Fea. No.	Feature Type	Estimated Size: length (m)	Estimated Size: width (m)	First Test: Unit	First Test: Depth (cmbs)	Second Test: Unit	Second Test: Depth (cmbs)	Third Test: Unit	Third Test: Depth (cmbs)	Topographic Setting	Location	Comments
41BL755	1	BR Midden	20	20	2	20 - 53	-	-	-	-	T1; abuts Toeslope	Near Head of a Side Drainage	-
41BL821	1	BR Midden	75	30	1	0-70	2	0-190	-	-	T1; up onto Colluvial Slope	Trib. of North Nolan Creek	Spring on Site
41BL889	1	BR Midden	60	50	1	0-60	3	60-100	-	-	T1; abuts Toeslope	Trib. of Oak Branch	Spring on Site
41BL882	2	BR Midden	20	10	4	0 - 108	-	-	-	-	T1	Trib. of Oak Branch	Spring on Site
41CV44	1	BR Midden	60	35	3	0-80	-	-	-	-	Toeslope	South of Owl Creek	-
41CV46	1	BR Midden	140	80	1	100-130	TP2	70-105	TP4	70-100	Alluvial Fan	South of Owl Creek	-
41CV47	1	BR Midden	30	20	2	30-60	TP1	11-108	-	-	Bench	Above Trib. of Owl Creek	-
41CV48	1	BR Midden	7	1.8	1	3-70,	-	-	-	-	Alluvial Fan	South of Owl Creek	-
41CV48	2	BR Midden	60	60	3	0-62	-	-	-	-	Alluvial Fan	South of Owl Creek	-
41CV48	3	BR Midden	not estimated		2	100-140	-	-	-	-	T1B	West of Trib. of Owl Creek	-
41CV48	4	BR Midden	not estimated		2	140-190	-	-	-	-	T1B	West of Trib. of Owl Creek	-
41CV88	1	BR Midden	50	25	1	10-60,	TP2	10-40,	-	-	T1A	Confluence of Cowhouse and Cottonwood	-
41CV95	8	BR Midden	12	10	2	20 - 66	-	-	-	-	T1	Cowhouse Creek terrace	-
41CV97	1	BR Midden	10	4	5	20 - 52	-	-	-	-	T1; base of Toeslope	Cowhouse Creek terrace	-
41CV97	3	BR Midden	not estimated		1	82 - 135	-	-	-	-	Toeslope	Cowhouse Creek terrace	-
41CV99	2	BR Midden	40	30	1	50-115	-	-	-	-	Alluvial Fan	South Side of Cottonwood Creek	-
41CV99	3	BR Midden	40	36	2	90-160	-	-	-	-	Alluvial Fan	South Side of Cottonwood Creek	-
41CV117	1	BR Midden	250	120	1	0-60	TP2	0-80	TP4	60-80	T1	South of Clear Creek	-
41CV137	1	BR Midden	50	50	1	80-120	2	0-120	-	-	T1; up a Colluvial Slope	Trib. of Henson Creek	Spring on Site
41CV137	3	BR Midden	not estimated		2	122 - 147	-	-	-	-	T1	Trib. of Henson Creek	Spring on Site
41CV174	6	BR Midden	2	2	7	60 - 130	-	-	-	-	Toeslope	Table Rock Creek	-
41CV184	1	BR Midden	50	35	1	0-50	TP2	0-50	-	-	T1A and T1B	South of Henson Creek	-
41CV319	1	BR Midden	16	12	2	0-30	3	0-110	4	0-80	Upland; Paluxy Sand	Cowhouse/Table Rock Interfluve	-
41CV379	1	BR Midden	70	30	1	10-50	TP2	10-30,	-	-	Toeslope	South of Owl Creek	-
41CV380	1	BR Midden	10	10	1	0-53	-	-	-	-	Bench	South of Owl Creek	-
41CV389	1	BR Midden	30	20	2	0-90	-	-	-	-	Toeslope and T1A	Confluence of Cowhouse and Tablerock	-
41CV389	5	BR Midden	15	10	1	170-200	-	-	-	-	T1B	Confluence of Cowhouse and Tablerock	-
41CV403	1	BR Midden	50	30	1	0-110	TP2	0-95	-	-	Toeslope	Head of Henson Creek	Spring on Site
41CV481	1	BR Midden	80	60	4	0-70	-	-	-	-	Toeslope	South of Clabber Creek	Possibly same as F5
41CV481	4	BR Midden	not estimated		1	317-345	-	-	-	-	Toeslope	South of Clabber Creek	-
41CV481	5	BR Midden	80	60	1	0-37	-	-	-	-	Toeslope	South of Clabber Creek	Possibly same as F1
41CV481	6	BR Midden	not estimated		2	70-90	-	-	-	-	T1	South of Clabber Creek	-
41CV587	1	BR Midden	15	10	1	0-110	4	70-130	-	-	T1; abuts Toeslope	Head of Two Year Old Creek	Spring on Site
41CV595	1	BR Midden	20	10	1	10-100	-	-	-	-	Upland; Paluxy Sand	Above Stampede Creek	-
41CV595	2	BR Midden	22	15	2	0-70	3	0-70	-	-	Upland; Paluxy Sand	Above Stampede Creek	-
41CV960	3	BR Midden	35	20	4	0 - 68	-	-	-	-	T1	Cowhouse Creek	-
41CV960	4	BR Midden	35	10	2	0 - 60	-	-	-	-	T1	Cowhouse Creek	-
41CV1007	1	BR Midden	29	14	1	0 - 130	-	-	-	-	T1; abuts Toeslope	Trib. of Two Year Old Creek	-
41CV1023	5	BR Midden	16	9	6	0-30	7	0-30	-	-	Ancient Strath Terrace	Above Stampede Creek	-
41CV1027	2	BR Midden	12	12	3	0-70	-	-	-	-	Upland; Paluxy Sand	Above Stampede Creek	-
41CV1038	1	BR Midden	60	25	BT 1	0 - 35	-	-	-	-	T1A	Cowhouse Creek terrace	-
41CV1136	2	BR Midden	2	2	3	40 - 82	-	-	-	-	T1	Table Rock Creek and Trib.	-
41CV1167	1	BR Midden	50	50	1	20 - 55	-	-	-	-	T1; onto Toeslope	Head of Stampede Creek	-

Table 8.1 Concluded.

Site	Fea. No.	Feature Type	Estimated Size: Length (m)	Estimated Size: Width (m)	First Test: Unit	First Test: Depth (cmbs)	Second Test: Unit	Second Test: Depth (cmbs)	Third Test: Unit	Third Test: Depth (cmbs)	Topographic Setting	Location	Comments
41CV1391	1	BR Midden	20	12	2	0 - 40	-	-	-	-	Upland; Paluxy Sand	Above Trib. of House Creek	-
41CV1391	1A	BR Midden	correlated w/Feature 1		4	0 - 40	-	-	-	-	Upland; Paluxy Sand	Above Trib. of House Creek	-
41CV97	2	BR Midden	5	5	4	0 - 230	-	-	-	-	T1; near base of Toeslope	Cowhouse Creek terrace	-
41CV174	1	BR Midden	110	50	5	20 - 95	-	-	-	-	T1B; on to Toeslope	Table Rock Creek	-
41CV481	2	BR Midden (buried BR Mound?)	12	12	1	162-207	-	-	-	-	Toeslope	South of Clabber Creek	-
41BL198	1	BR Mound - Annular	12	12	1	0 - 90	-	-	-	-	Upland	South of Cowhouse Creek	Modified Bedrock Depression, 1 Rockshelter on Site
41BL198	2	BR Mound - Annular	5	5	2	0 - 50	-	-	-	-	Upland	South of Cowhouse Creek	Modified Bedrock Depression, 1 Rockshelter on Site
41BL233	5	BR Mound - Annular	9	7.5	1	0-60	-	-	-	-	Upland	East of Taylor Branch	-
41BL564	1	BR Mound - Annular	12	11.5	2	0 - 90	-	-	-	-	Upland	East of Taylor Branch	2 Rockshelters on Site
41BL598	1	BR Mound - Annular	13	13	1	0-80	-	-	-	-	Upland	West of Bear Creek	Five mounds on site
41BL608	1	BR Mound - Annular	10	10	1	0-55	-	-	-	-	Upland	North of Cowhouse Creek	-
41CV124	1	BR Mound - Annular	9	9	1	0-103	2	0-75	-	-	Upland	Southwest of Clabber Creek	On margin of 41CV125 ("LRP" site)
41CV594	2	BR Mound - Annular	12	6.5	1	0-80	2	0-55	-	-	Upland Paluxy Sand	East of Cottonwood Creek	-
41CV1027	1	BR Mound - Annular	11	10	1	0-50	2	0-50	-	-	Upland; Paluxy Sand	Above Stampede Creek	Modified Bedrock Depression
41CV1403	1	BR Mound - Annular	15	15	1	0-50	-	-	-	-	Upland	West of Trib. of House Creek	1.25 m diameter x 30 cm deep central depression
41BL233	1	BR Mound - Domed	8	6	2	0-50	-	-	-	-	Upland	East of Taylor Branch	-
41BL568	1	BR Mound - Domed	13	13	3	0 - 140	-	-	-	-	Upland	East of Taylor Branch	11 Rockshelters on Site
41BL568	2	BR Mound - Domed	11	11	4	0 - 80	-	-	-	-	Upland	East of Taylor Branch	11 Rockshelters on Site
41BL743	1	BR Mound - Domed	11	9	1	0 - 53	-	-	-	-	Upland	South of Cowhouse Creek	Modified Bedrock Depression
41CV1195	1	BR Mound - Domed	10	10	1	0-52	-	-	-	-	Upland	North of Cowhouse Creek	-
41CV1378	1	BR Mound - Domed	7	7	1	0-55	-	-	-	-	Upland	Above Turkey Run Creek	Bisected by tank trail
41CV1403	2	BR Mound - Domed	10	10	2	0-30	-	-	-	-	Upland	West of Trib. of House Creek	South half in tank trail
41CV1423	1	BR Mound - Domed	14	14	6	0 - 26	-	-	-	-	Higher Pleistocene Terrace	Table Rock Creek	Natural Bedrock Depression
41CV97	2B	BR Pavement	not estimated		4	100-117	-	-	-	-	internal feature in F2	Cowhouse Creek terrace	-
41CV97	3A	BR Pavement	not estimated		1	110-115	-	-	-	-	internal feature in F3	Cowhouse Creek terrace	-
41CV97	3B	BR Pavement	not estimated		1	122-133	-	-	-	-	internal feature in F3	Cowhouse Creek terrace	-
41CV1136	3	BR Pavement	1.1	0.9	1	118-130	-	-	-	-	T1	Table Rock Creek and Trib.	-

sites on the fort (Trierweiler 1994), that the features exhibiting relief were distinctly different in many ways from the features lacking relief.

In the traditional view, the distinction between burned rock features that stand out in relief on the landscape and those that do not is simply that the former were constructed in an active depositional environment, and hence were buried, either during the "life" of the feature or following abandonment. Based on initial impressions during the reconnaissance phase, and in keeping with the "back to basics" approach of the Fort Hood research design (Ellis 1994), we chose to test this perception by distinguishing between the two feature types. Note that the classification of a feature as a "mound" or "midden" was made on morphological grounds prior to excavation, and not on the basis of any attributes revealed during testing. As the following discussion demonstrates, real differences in structure and artifact content were apparent between the two classes of features.

Recently, Collins (1991) has argued that existing methods of burned rock "midden" investigation have reached an impasse and that new and innovative techniques must be employed to further research. We wholeheartedly agree. However, we maintain that this approach cannot bear full fruit until a more basic obstacle is surmounted. Based on TRC Mariah's work at Fort Hood, we propose that much of the confusion surrounding burned rock "middens" in Central Texas is the result of a perceptual problem imposed by terminology; namely, that there are several distinctly different types of features that have been subsumed, to this point, under the term "midden." This argument has been made previously (Kleinbach et al. 1995), and has been questioned informally by a number of Central Texas archeologists in subsequent conversations with various authors of the previous report. We repeat the argument here, providing more evidence from the additional sites that, in our opinion, clearly demonstrates that the mounds and middens on Fort Hood are indeed structurally and artifactually distinct classes of features representing different types of prehistoric behavior.

8.1.1 Burned Rock Mounds

As defined here, a burned rock mound consists of an accumulation of burned rock (typically limestone) exhibiting discernable relief above the ground surface and having a fairly regular circular or oval shape in plan view. Two distinct burned rock mound variants are recognized in the typology employed in this study. Annular burned rock mounds are mounds that possess a centralized depression, while domed burned rock mounds lack a central depression. Examples of both of these two basic variants were investigated during the current project.

While the distinction between annular and domed mounds used here is a simple function of surface morphology, this usage can be quite misleading and requires clarification. Typically, annular mounds represent features that accreted around some type of central thermal feature, and have a heterogeneous internal composition that reflects this central focus (Prewitt 1991; Treece 1993:530-531; Abbott and Frederick 1991). Frequently, the central portion of these mounds is marked by a relatively rock-free zone beneath the depression, a central firepit excavated into the substrate, and/or an internal hearth constructed with larger slabs. Domed burned rock mounds, on the other hand, appear to represent features that accreted by a different process (or suite of processes); while they may be internally heterogeneous, and often include identifiable hearths or other structural features (see Quigg and Ellis 1994), many are simply structureless accumulations of burned rock, matrix, and artifacts, and all lack the centralized, doughnut-like internal morphology of the annular construction style.

Unfortunately, the su face morphology characteristics used to classify the mounds here do not necessarily correspond to the formation processes involved in their construction. Using surface characteristics alone, all that is required to convert a domed mound to an annular mound is a single vandal with a shovel and a few hours to kill. On the other hand, unless a noticeable depression is present, mounds with an "annular" internal morphology are indistinguishable from those with a "domed" internal morphology on the basis of surface topography. This point is graphically illustrated by Quigg's study of the temporal context of mounds on Fort Hood (Quigg and Ellis 1994:203-274), where some type of central feature was detected in a variety of "annular" and "domed" features. Moreover, because the goal of the investigations was to determine NRHP eligibility while minimizing adverse the impacts to eligible sites, the level of effort involved in the various phases of testing was not always sufficient to resolve questions of internal composition. Thus, the typological classifications used here reflect surface morphology only, and some of the "domed" mounds listed in Table 8.1 may actually represent an "annular" style of construction and internal morphology, and vice versa.

Eighteen burned rock mounds on Fort Hood were tested by TRC Mariah during the three testing phases. Although larger examples of mounds and mounds constructed on alluvial surfaces are known elsewhere (cf. Lintz et al. 1993; Treece 1993), all burned rock mounds investigated in this study were less than 15 m in diameter and were located on uplands or stable high Pleistocene terraces (see Table 8.1). Thus, the potential for appreciable sedimentation was negligible in most cases, although two mounds were situated in the depositional Paluxy environment. The mounds ranged from 20 to 100 cm high (relief above ground surface) and from 5 to 15 m in diameter, with eleven measuring between 10 and 13 m. Internal thicknesses ranged from 26 cm to 120 cm. In general, the investigated mounds are composed of angular and blocky burned limestone clasts that have been broken by thermal shock and are contained in a very dark grayish brown to black, clayey or loamy matrix. In most cases, almost all clasts in the mounds are supported by other clasts, with the fine matrix filling in the interstices. Consequently, burned rock counts and weights per given volume are relatively high.

A central depression was observed on the surface of ten (56%) of the mounds. In addition, remnants of central pits and associated slab-lined or stacked-slab features were detected at the base of four of the "annular" and one of the "domed" mounds, and centralized, possibly modified bedrock depressions were detected beneath three other "annular" and one other "domed" mound. Many of the modified depressions were flanked by horizontally stacked limestone slabs that were noticeably larger than most of the other clasts in the features. No substrate depression was noted beneath the other nine features (three annular, six domed), although the limited amount of testing cannot rule out the possibility that such features are actually present. Generally, relatively sparse amounts of lithic tools and debitage, charcoal, and ecofacts were contained within the mounds, especially when compared to the investigated burned rock middens (see Section 8.4.1). This fact seems to be recognized by pothunters, as mounds are rarely vandalized to any degree. With the exception of the two mounds situated in the Paluxy environment, the potential for substantial Holocene-age sediment deposition by purely natural processes in the mound settings is minimal to negligible.

8.1.2 Burned Rock Middens

For purposes of this report, a burned rock midden is defined as a relatively thick, amorphous deposit of buried burned rock that does not exhibit significant relief and varies greatly in shape and size. The overwhelming majority (85%) of features defined as burned rock middens were located on aggrading slopes, toeslopes, alluvial fans, and terraces, suggesting that the lack of relief is probably principally a function of depositional environment, and that if such a feature were to form on a stable surface, it would probably also have a mounded morphology (and may indeed have had a mounded morphology relative to the relevant paleosurface). However, the size and shape of middens is much more variable than is characteristic of the mounds (Figure 8.2).

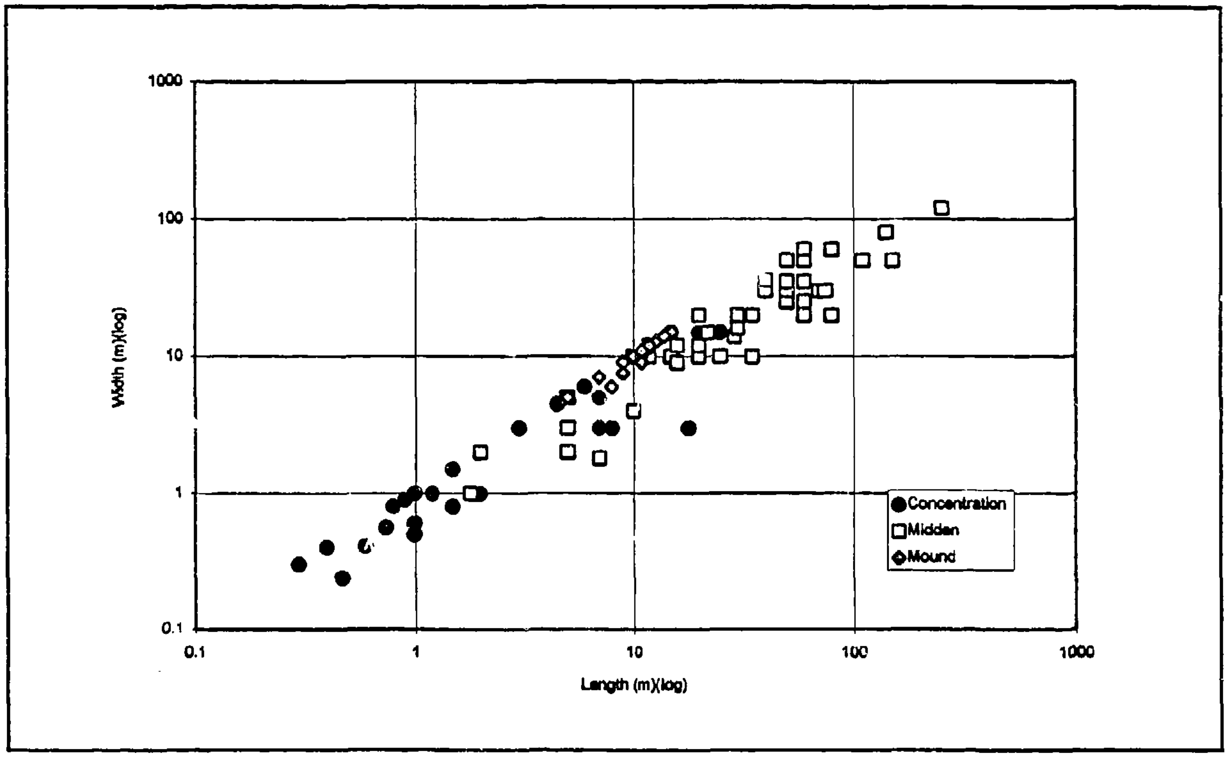


Figure 8.2 Plot of Length vs. Width of Burned Rock Mounds, Middens, and Concentrations Documented During the Testing Phase (log/log plot).

Burned rock middens are striking when viewed in profile and are generally composed of dense burned rocks within a very dark, organic-rich fine matrix. They typically exhibit a chaotic internal structure, although internal features can sometimes be identified. The matrix is typically black loam to clay loam, and the rock generally exhibits mixed clast and matrix support; in other words, middens typically have a higher matrix-to-rock ratio than mounds. When compared to burned rock mounds, high frequencies of lithic tools, debitage, and ecofacts are typically contained within these middens (see Section 8.4.1). Consequently, they are a favorite target of pothunters. Almost all middens of any appreciable size on Fort Hood exhibit some damage by vandalism, and a few appear to have been effectively strip-mined to recover desirable artifacts.

Fifty-nine burned rock middens were identified and tested during Phase 1 and Phase 2 excavations on the fort (see Table 8.1). Approximately 80% of these features were clearly vandalized and/or had some type surface disturbances. Sizes were estimated for all but six of the 55 features. Estimated sizes ranged from less than 1 x 2 m to 250 x 120 m, with 58% of the estimated features having a maximum dimension of 25 m or more.

Although vertical exposures were limited to test unit and trench profiles, observed thicknesses varied from less than 10 cm to 230 cm, with an overall mean thickness of 69 cm. Internal structural components were rarely found within the middens. Although 55 middens were tested, internal features were recognized in only seven (13%). However, those middens that did contain internal features often contained several. For example, an ash lens (F 2A), a burned rock pavement (F 2B), and a burned rock and mussel shell lens (F 2C) were all detected within F 2 at 41CV97. Also at 41CV97, F 3 contained two separate internal burned rock pavements (Fs 3A and 3B). Four other middens (F 4 at 41BL339, F 6 at 41CV174, F 1 at 41CV403, and F 1 at 41CV1391) contained an internal hearth or a hearth immediately below the midden. Interestingly, the hearth (F 2) at the latter of these middens extends into a Paluxy bedrock depression. The only other internal feature discovered in a midden was a carbonized post (F 2) at 41CV1167. Of note, large rock-filled hearths were noted a few centimeters below F 1 at 41CV88 and F 3 at 41CV960.

Five of the middens are buried in Paluxy Sand deposits. Three of these (Fs 1 and 1a at 41CV319, F 1 at 41CV595, and F 2 at 41CV1027) appear to be within large natural depressions or previously gullied areas. Only one internal structural component (F 2, a hearth within F 1 at 41CV1391) was found in the test units excavated on these five middens. The rate of artifact return from these upland middens is dramatically lower than the more typical toeslope and terrace features, suggesting that they probably represent a different cultural phenomenon (Abbott 1995:823-837).

8.1.3 Burned Rock Concentrations

A burned rock concentration, here defined, is a relatively shallow, amorphous grouping of burned rocks, typically 1-2 clasts thick, located on an extant surface or a buried paleosurface. In general, although a typical burned rock concentration is readily recognized, the term is difficult to define precisely, given that burned rock concentrations grade into the midden category at one extreme and into simple scatters of burned rock scatters. Thus, the problem becomes where to draw the typological boundary. Although some type of quantitative measure could be arbitrarily established, to this point the term has been applied qualitatively to a spatial aggregate of burned rock that is not dense enough to qualify as a midden, yet too discrete to be considered simply a scatter. While this usage seems unsatisfactorily vague in print, in practice it has proven effective.

Several trends are apparent in the features discussed here. The burned rock concentrations examined during testing usually contained low frequencies of other types of cultural material. Typically little, if any, charcoal was present; debitage was absent in more than half of the concentrations examined (and, when present, occurred in low frequency), and small quantities of mussel shell and/or bone were found only rarely. In all, 32 burned rock concentrations were investigated with an excavation unit during formal testing (see Table 8.1). Estimated sizes ranged from less than 1 x 1 m to 50 x 30 m. Thicknesses of all the burned rock concentrations ranged from 0 to 43 cm, with an overall mean thickness of about 15 cm. No internal structural components were found within any of these features, although several were interpreted as probable dispersed hearths.

8.1.4 Burned Rock Pavements

A burned rock pavement, here defined, is an extremely dense arrangement of burned rock, typically 1-2 tiers thick, that appears to have been intentionally fitted together, jigsaw-style, to form a relatively flat, articulated surface. Although their function is unknown, it is likely that they represent cooking or roasting surfaces. Only four burned rock pavements were identified from the 57 sites, and all of these were encountered in test pits, limiting the chance for estimating dimensions. In addition, three of the identified pavements were internal features within larger middens, and two were discovered in discrete strata of the same test pit at 41CV97, suggesting that the activity represented was performed repeatedly at that location.

8.2 HEARTHS

A hearth, here defined, is a discrete area that formed the floor of a fire. Typically, a hearth reflects intentional preparation of an area for burning, whether by gathering of hearthstones to contain the fire and provide a heat sink that will maintain high temperatures for longer periods, excavation of a pit, or construction of a slab base or enclosure. A total of 70 hearths were identified on 29 (24%) of the 119 formally tested prehistoric sites. Many of these features were initially exposed in backhoe trenches or cutbanks, where removal of a portion made them recognizable in section, or only partially captured in test pits. Consequently, almost half (34, or 49%) were less than 50% excavated, while 12 (17%) of the hearths were fully excavated (although the percentage excavated of two additional hearths was high enough that their dimensions could be confidently determined). In addition, five of the hearths exposed in trench profiles were not excavated at all, although they were profiled and charcoal samples were taken.

Variations in the morphology of Central Texas hearths have been noted by a number of authors, including Weir (1976), Prewitt (1981), and Trierweiler (1994). This study uses a typology developed during the previous testing effort (Kleinbach et al. 1995) that is based on (1) method of construction and (2) morphology of the hearth base. Unlike previous typologies (e.g., Prewitt 1981), size was not used as a key attribute when defining hearth types because so few of the hearths tested were completely excavated.

Six principal types were identified in the sample of 70 hearths. These were:

- Type 1: flat, angular rock/cobble layered;
- Type 2: flat, slab layered;
- Type 3: basin, very little or no burned rock;
- Type 4: basin, angular rock/cobble layered;
- Type 5: basin, slab layered; and
- Type 6: dispersed.

Type 4 and 5 hearths were further subdivided into "rounded basins," where the sides merge smoothly into a curving floor, and "pie plate basins" where the floor is flat and meets the sides abruptly. For clarification, key descriptive terms are defined under each hearth type. The characteristics of each hearth investigated during this phase of investigation are detailed in Table 8.2.

In general, Type 1 hearths consist of one or two layers angular, 1-10 cm diameter burned rocks and/or burned cobbles. Contiguous rocks typically overlap partially and appear to be haphazardly arranged, in contrast to burned rock pavement construction, where the rocks are densely and probably purposefully fitted together. The base of a Type 1 hearth is relatively flat, indicating that the rocks were laid on an existing level surface, or possibly one that was smoothed but not excavated.

Nineteen Type 1 hearths were identified during testing, although only 17 were actually tested. This represents 27% of the hearth sample, and is the second most common type of hearth identified on the sites. Estimated dimensions of the Type 1 hearths ranged from approximately 0.4 to 1.0 m in maximum diameter (mean estimated diameter = 70 cm) and from 5 to 34 cm thick. The 34 cm thick feature is an extreme outlier; the remaining eighteen features were 19 cm thick or less. Where it could be identified, plan shape was typically circular, while two features were considered amorphous, one was ovate, and one was crescentic. In several cases, charcoal and/or an oxidation rind was present at the base of the hearth.

Type 2 hearths were constructed of tabular slabs that typically at least 10 cm long. As with Type 1, the base of a Type 2 hearths is flat. Only two Type 2 hearths were examined during testing, which represents only 3% of the sample. One was nearly circular (approximately 100 x 80 cm) while the other was distinctly oblong (50 x 200 cm). Both were approximately 10 cm thick, and were comprised of a single rock layer. The low number of Type 2 hearths identified during testing implies that this style of construction was not commonly employed, or alternatively that it was routinely disturbed during the use-cycle.

Seven Type 3 hearths, representing 10% of the total sample, were tested. They varied from approximately 0.4 to 1.3 m in maximum plan dimension, and from 4 to 55 cm in thickness. The mean estimated diameter of the features was approximately 80 cm. Four exhibited a circular

Table 8.2 Classification, Dimensions, and Environmental Setting of Hearths Documented During Testing Investigations on Fort Hood.

Site	Fea. No.	Excavated Dimensions (cm)	Thickness (cm)	Estimated Dimensions (cm)	Rock Layers	Depositional Context	Comments
Type 1: Flat, Angular Rock/Cobble Layered							
41BL154	2	49x23	7	49x50	1	Alluvium	
41BL339	1	not excavated	10	at least 58	1	Alluvium	Examined in BT profile only; minimum dimension only
41BL567	1	53x40	12	53x40	1	Rockshelter	
41CV95	3	50x25	5	60x50	1	Alluvium	
41CV95	4	85x88	34	85x88	2	Alluvium	
41CV95	7	42x40	8	42x50	1	Alluvium	
41CV97	11	42x33	13	42x66	1	Alluvium	
41CV97	13	45x55	7	55x45	2	Alluvium	
41CV97	9	60x20	19	60x90	1	Alluvium	
41CV98	5	100x85	13	100x100	1	Alluvium	
41CV317	1	67x47	7	73x73	1	Alluvium	
41CV378	1	100x52	13	100x100	1	Holocene Fan	
41CV478	1	57x30	15	100 x 100	1	Paluxy	
41CV478	2	100x90	25	100 x 100	1	Paluxy	
41CV960	1	35x22	10	100x100	1	Alluvium	
41CV1105	2	not excavated	10	at least 28	1	Alluvium	Examined in BT profile only; minimum dimension only
41CV1129	1	100x100	7	100x100	1-2	Alluvium	
41CV1136	6	54x49	12	54x49	1-2	Alluvium	
41CV1166	1	55x38	19	55x55	1-2	Rockshelter	
Type 2: Flat, Slab Layered							
41BL538	1	not excavated	10	100x80	1	Rockshelter	Noted in profile only
41CV95	10	100x55	12	200x50	1	Alluvium	
Type 3: Basin, Very Little or No Rock							
41BL567	2	25x20	6	40x35	N/A	Rockshelter	
41CV97	16	75x60	17	75x60	N/A	Alluvium	
41CV97	17	55x25	12	55x50	N/A	Alluvium	
41CV97	4	61x25	4	61x50	N/A	Alluvium	
41CV97	5	66x64	7	64x80	N/A	Alluvium	
41CV1085	1	100x85	18	130x110	N/A	Rockshelter	
41CV1200	3	100x95	55	120x120	N/A	Alluvium	
Type 4: Basin, Angular Rock/Cobble Layered							
41BL339	4A	65x63	14	80x70	3	Alluvium	Base of Midden
41CV88	2	63x57	11	63x57	1-2	Alluvium	9 cm below Feature 1 (midden)
41CV95	5	68x40	20	68x80	1	Alluvium	
41CV97	12	100x36	25	100x110	1	Alluvium	"pie plate" morphology
41CV97	15	80x30	19	80x60	2	Alluvium	"pie plate" morphology
41CV97	7	80x70	8	160x140	2	Alluvium	
41CV98	4	110x50	36	150x130	3	Alluvium	
41CV98	6	45x35	16	80x75	2	Colluvial Toeslope	distinct charcoal lens
41CV98	7	40x20	8	45x40	2	Colluvial Toeslope	

Table 8.2 Concluded.

Site	Fea. No.	Excavated Dimensions (cm)	Thickness (cm)	Estimated Dimensions (cm)	Rock Layers	Depositional Context	Comments
Type 4: Basin, Angular Rock/Cobble Layered (con't.)							
41CV115	1	80x62	15	90x90	3-4	Rockshelter	charcoal, ash, and burned earth at base
41CV174	10	60x40	7	60x40	1	Alluvium	Five cm above midden
41CV174	2	not excavated	15	at least 52	1	Alluvium	Examined in BT profile only; minimum dimension only
41CV174	4	80x40	21	80x80	2	Alluvium	
41CV317	2	100x60	35	200x150	2-3	Alluvium	distinct ash deposit and oxidation rind
41CV317	3	78x60	24	80x80	2	Alluvium	distinct charcoal lens
41CV389	2	60x30	16	60x60	2	Alluvium	
41CV389	3	50x45	10	90x90	1-2	Alluvium	
41CV389	4	38x31	15	156x118	1-3	Alluvium	
41CV587	2	60x38	31	200 x 50	2-3	Rockshelter	
41CV918	1	60x40	12	80x70	1-2	Alluvium	charcoal lens
41CV960	2	100x100	18	100x100	1	Alluvium	Eight cm below midden
41CV1027	3	100x110	15	100x110	2	Paluxy Colluvium	
41CV1038	3	100x100	23	102x100	1-2	Alluvium	
41CV1038	4	76x66	22	76x70	2-3	Alluvium	
41CV1038	6	87x63	11	87x83	2-3	Alluvium	
41CV1105	1	65x55	7	120x120	1	Alluvium	
41CV1105	4	30x40	10	30x40	1	Alluvium	
41CV1129	2	not excavated	20	60x50	1-2	Alluvium	Examined in profile only; minimum dimension only
41CV1129	3	75x69	18	108x85	2	Alluvium	charcoal lens
41CV1200	2	100x100	46	130x130	3	Alluvium	Two superimposed Hearths
41CV1471	1	60x50	29	125x125	3-4	Alluvium	prepared basin in buried gravel lens
Type 5: Basin, Slab Lined							
41BL339	2	60x50	22	120x50	2-3	Alluvium	"pie plate" morphology
41CV97	19	60x30	10	70x60	1	Alluvium	"pie plate" morphology
41CV174	3	89x60	15	170x120	3	Alluvium	"pie plate" morphology
41CV174	5	100x65	22	200x200	2	Alluvium	"pie plate" morphology; stratified above Feature 8 (basin hearth)
41CV174	7	52x46	12	52x46	1	Alluvium	"pie plate" morphology
41CV174	8	100x100	23	200x200	1	Alluvium	"pie plate " morphology; stratified below Feature 5 (basin hearth)
41CV184	3	100x100	25	400x400	5	Alluvium	charcoal and oxidized earth at base
41CV403	2	85x45	14	85x80	2	Colluvial Toeslope	stratified a few cm below Feature 1 (midden)
41CV1136	5	51x35	13	51x55	2	Alluvium	
41CV1391	2	55x55	23	100x100	1-2	Paluxy Colluvium on Pleistocene Terrace	Base of midden incorporated natural bedrock depression in construction
Type 6: Dispersed							
41CV97	10	80x70	4	80x70	N/A	Alluvium	

plan shape, two were amorphous, and one was distinctly ovate. Very little or no burned rocks were used in the hearth construction, although a few burned rocks were occasionally discovered in association. The feature matrix consisted of ash and/or charcoal, with either intermixed burned earth (typically in shelters) or an underlying oxidation rind that ranged from a few centimeters to a maximum of nine centimeters thick. The feature fill is typically indicative of high intensity heating (oxidized soil) and a somewhat long burning fire (ash and charcoal). Although only one in ten of the examined hearths were Type 3, it should be noted that similar features without strong thermal alteration would be very easy to miss in backhoe trench walls, and this type of hearth is probably underrepresented.

Overall, three Type 3 hearths had a maximum thickness between 4 and 7 cm, three ranged from 12 to 18 cm, and one hearth (F 3, 41CV1200) was 55 cm thick. A mini-trench manually excavated through the center of this unusually deep basin revealing a series of ash, oxidized earth, and clay-silt lenses that represent repeated use of the feature. In addition, 14 unburned, tabular slabs overlay the top of the hearth. This may represent an aborted attempt to reuse the hearth or an endeavor to smother a pre-existing fire. Krotavina disturbance, probably encouraged by the soft texture of the matrix, was noted in the deep basin and in several of the other Type 3 hearths.

Type 4 hearths consist of basins filled with small to medium-sized angular burned rocks and/or burned cobbles. These are the most prevalent hearth type identified, representing 44% of the sample. Although most were one to two rock layers thick, ten (32%) were composed of three or more rock layers. Overall thickness ranged from 7 cm to 46 cm, with 12 (39%) exhibiting a thickness of 25 cm or more. Type 4 hearths are relatively large, with a mean estimated diameter of approximately 94 cm.

Four of the Type 4 hearths (F 4A, 41BL339; F 2, 41CV88; F 10, 41CV174; and F 2, 41CV960) were encountered within or close proximity to burned rock midden deposits. In several cases, these hearths were situated beneath the midden, and might possibly represent a activity focus feature around which the midden began to accrete. However, none of these features were centrally located or overlain by depositional/constructional structures in the midden that suggest that the activity continued throughout a significant part of the life of the midden (e.g., low rock density zones, dipping burned rock lenses), or that the hearth was the main focus of activity, such as were observed in the upland mounds.

Another notable characteristic within the Type 4 hearth sample was a subtle, but noticeable, distinction in basin shape. Two hearths (F 12 and F 15) at 41CV97 exhibited a "pie plate" morphology distinctly different from the "classic basin" form. In this form, the rocks located around the perimeter dipped distinctly toward the middle of the hearth, while rocks at the hearth center were horizontally laid.

Morphologically, Type 5 hearths are very similar to Type 4, with the distinction that large, tabular slabs were typically used in construction, as opposed to the smaller angular rocks and cobbles of Type 4. Ten Type 5 hearths, representing approximately 15% of the total hearth sample, were documented. Notably, most of the hearths contained rock in addition to the lining slabs. Only three of the Type 5 hearths were one layer thick, and one contained at least five discrete layers of rock.

One of the most noticeable aspects of Type 5 hearths is their size; while not all were large, they included the largest hearth features of any of the investigated types, with a mean estimated diameter of 145 cm and including three of 2 m diameter or more. One of these large features (41CV184, F 3) was estimated to be 4 m in diameter, which is twice the size of any of the other types. In section, six of the hearths exhibited the pie plate morphology, while four were curving basins. Overall, the Type 5 hearths ranged from 10 to 25 cm thick, with a mean of 18 cm. One Type 5 hearth (F 2, 41CV1391) was encountered at the base of a midden deposit. The sandy matrix was charcoal stained and a natural bedrock depression was incorporated into the hearth construction.

Only one example (F 10, 41CV97) of a dispersed hearth (Type 6) was identified. This feature consisted of two distinct, ovate areas of stratigraphically related oxidized soil confined to a 1 m^2 test. The oxidized areas were 5 cm thick and had flat bases. A few small burned rocks, heavily charred bone fragments, and heat treated lithics were recovered from the oxidized sediment and the matrix surrounding these stained areas. Even though this sample is extremely limited, this type appears to represent an expedient hearth (no purposefully prepared surface) of high heat intensity.

8.3 OTHER FEATURES

8.3.1 Mussel Shell Features

Mussel shell was recovered from 76 of the 119 sites, clearly indicating that mussels were utilized as a food source. However, most of this material occurred as one component of a diverse suite of faunal remains in rockshelter fills and burned rock features, suggesting that mussels typically formed only one part of a broader-based economy. Only two features dominated by mussel shell were documented. One of these (41BL339, F 3) consisted of a small shell midden interstratified in the alluvial terrace of Cowhouse Creek. This feature consisted of a dense, subhorizontal concentration of shells and associated debris focused around a shallow, 60 by 50 cm depression. The depression contained a few burned rocks, a biface, 10 to 15 bone fragments, and 100 to 120 mussel shells (about six layers thick), while approximately 380 shells, 5 bone fragments, 11 burned rocks (4 kg), and 17 flakes were recovered from the feature as a whole. Charcoal flecking, although observed across the entire shell lens, was most noticeable in the depression, suggesting that probably represents a hearth used to prepare the mussels for consumption. Although only 1 m^2 of the feature was excavated, it was estimated to cover at least 2.5 x 2 m area on the basis of the extent of shell exposed in an adjacent backhoe trench.

The second mussel shell feature consisted of a distinct shell lens (F 2C) in a burned rock midden (F 2) at 41CV97. This lens was approximately 40 cm thick and also contained high volumes of burned rock (190 kg) and lithics, including a Bulverde point. This suggests that the feature represents a variety of activities, including but not limited to mussel shell processing.

Another mussel shell accumulation (F 10), also found in the alluvial terrace of Cowhouse Creek, was discovered at 41CV95. However, because the feature clearly represented a hearth with associated mussel shell, it was classified as a hearth. The feature was composed of a linear cluster of about 25 burned rocks, of which several rocks appeared to have been fire-cracked in place and shattered upon removal. No charcoal staining was observed in F 10, but more than 60 mussel shell umbos were recovered in association. Most mussel shells occurred at the same depth as the burned rocks, suggesting they represent the same cycle of feature use.

In all three instances, the accumulation of mussel shell appear to have resulted from human procurement and subsequent consumption. Burned rock and some charcoal is directly associated with the features, implying the mussels were heated and or cooked prior to consumption. These mussels obviously served as a food resource at these three locations and document utilization of aquatic resources.

8.3.2 Carbonized Post

One of the more unusual featured documented during testing consisted of a well preserved carbonized live oak post (F 2, 41CV1167) set into the matrix of a large burned rock midden (F 1). The base of the rounded post was discovered set upright within the midden matrix about 30 to 50 cmbs. In profile, the post consisted of a 20 cm long fragment tapered from 10 cm in diameter at the top to a 5 cm diameter flat bottom. The function of this single intrusive post is problematic. A radiocarbon age of 610 ± 50 BP (Beta b-79049) was obtained from the post, indicating that it does, in fact, represent a prehistoric feature. In contrast, a radiocarbon assay on charcoal from the surrounding midden matrix (TP 1, Level 4) yielded an age of 410 ± 80 BP. This age was from the matrix surrounding the "top" of the post, and may indicate that the post was in place for several hundred years as the feature accreted. Alternatively, the post may represent the "old wood" phenomenon (Schiffer 1987) or the matrix date may be based on charcoal that was churned into the matrix.

The function of the post is likewise unknown; it may represent a simple support rack or one piece of a more substantial structure. Although its location in the midden seems intuitively inconsistent with a prehistoric habitation structure, that possibility cannot be ruled out. Alternatively, there are several other types of wooden superstructures (e.g., drying racks, spit supports) that could potentially be associated with an accumulating midden.

8.3.3 Human Burials

Although human skeletal remains were found in a number of additional contexts during the testing phase, only four inhumations with any degree of integrity were identified. In accordance with standing instructions from Fort Hood base archeologist Dr. Jack Jackson, the discovery of human bone in subsurface context during testing had two results: (1) excavation of that unit ceased, and (2) the bones and related materials were immediately reinterred and the unit was backfilled. Consequently, information from the burials is limited to field observations only.

One burial, F 1 at rockshelter 41BL744, may represent either a primary or secondary burial. It was noted in an intrusive pit in the corner of TP 2 at a depth of 50 cmbs. This location was situated near the center of the rockshelter and close to the talus slope edge at the dripline. Because it was encountered in the corner of the test pit, the exact size and shape of the burial pit was not determined, but the pit was delineated by a sharp boundary between the yellowish brown silt forming the shelter fill and a very dark loam matrix infilling the pit. Non-articulated human remains were exposed in the pit, and excavation was halted. This feature appears to represent either a flexed primary burial or a secondary burial of unknown origin and association; the latter scenario is considered more likely due to the apparently random arrangement of skeletal elements in the excavated portion of the pit. The fill probably represents an admixture of different sediments excavated from the pit and present on the surrounding surface, and appears to contain at least some ash.

Feature 2 at 41CV44 consisted of a variety of human remains, including nine phalanges, one carpal, one metatarsal, one clavicle, and one shovel-shaped incisor recovered from Level 3 in TP 1. None of these remains were arranged in a way that suggested a primary burial; however, neither did they appear to be vandalized. A number of associated artifacts, including an arrow point, lithic debitage, biface fragments, and mussel shell were also recovered from the test pit, but it is unclear how much of the material was included with the burial and how much was already present in the sediment when the burial took place. This feature was detected in an area where burials had been noted by previous investigators, and is relatively unique in the available sample in that it represents an open-air burial on a colluvial toeslope.

Another burial (F 1) was detected in a test pit excavated in a small sinkhole (Fern Cave) on 41CV1165. This burial was covered with approximately 70 cm of sediment. While not an obviously primary burial, this feature was not investigated sufficiently to determine the configuration of the remains. Bones noted include a metatarsal and an incompletely exposed long bone (probably a humerus or tibia). Two flakes were also noted in the fill.

Finally, an articulated, flexed burial (F 1) was partially exposed 10-20 cmbs in the rockshelter at 41CV901. This burial was placed in a pit infilled with a matrix containing ash, charcoal flecks, and burned rocks, and was partially covered with a series of large slabs. The portion of the body exposed in the test unit consisted of an articulated femur, tibia, fibula, and pelvis lying left side down in a tight flexed presentation, with the head situated upslope towards the rear of the shelter. A number of artifacts, including flakes, animal bone fragments, small burned rocks, mussel shell, and a Perdiz point were noted from above the burial (0-10 cm bgs) in the pit fill.

In addition to these four features, human remains were recovered from a variety of additional sites, including 41BL198, 41CV97, 41CV1008, 41BL844, 41CV125, and 41CV935. None of these remains were in clear primary context, although some (e.g., at 41CV97) were associated with other features. While the disposition of these remains varied with circumstance, all were either immediately reburied (if recognized in the field) or returned to Fort Hood for repatriation (if unrecognized in the field and collected).

8.3.4 Caches

Two lithic caches, F 1 at 41BL208 and F 2 at 41CV137, were discovered during site investigations. The cache at 41BL208 consisted of a surficial scatter of 41 crude bifaces and several pieces of debitage spread over a 5.1 by 3.7 m area on the colluvially-mantled limestone slope. The second cache was recovered from 30 to 40 cmbs in the burned rock midden (F 1) at 41CV137. This cache was composed of several broken projectile points, various chert tools, and nearly a 100 flakes.

Both of these caches represent historic activity. At 41BL208, reexamination of the existing field notes indicated that the "cache" was in fact a dispersed cull pile created by the individuals who original discovered the site in 1986, while the cache at 41CV137 was subsequently determined to be in vandalized context. Consequently, neither of these apparent caches appear to be prehistoric, and thus have no relevant functional interpretation.

8.3.5 Ash Lenses and Ash/Charcoal Stains

Two ash lenses and an ash/charcoal stain were defined as a formal features during the testing phase. Feature 4 at 41CV1129 consisted of an ash lens that extended from 110 to 131 cmbs. The upper portion of the feature consisted of ash and burned soil, while the lower part was dominated by ash and charcoal. The feature covered the entire test pit in level 12 and extended beyond three walls of the test pit in level 13; consequently, no good size estimate was obtained, although a minimum size of 1.7 x 1.4 m was inferred based on exposure in the walls of the test pit and adjacent backhoe trench. The configuration of the basal contact suggests that the feature mantles an irregular paleosurface that dipped toward the adjacent tributary. A variety of cultural material, including flakes, burned rock, mussel shell, and bone, were recovered from the fill. Although this feature may represent a locus of burning, it is considered more likely that it represents a clean-out pile from an adjacent hearth (e.g., F 3).

Feature 5 at 41CV88 consisted of an amorphous concentration of ash, charcoal stains, and pockets of oxidized soil that extended from 100 to 119 cmbs. The feature had a minimum dimension of 100 x 92 cm, and an estimated size of 1.4 x 1.2 m. The base of the feature was flat, indicating that it was developed on an unprepared or lightly prepared paleosurface. Associated artifacts included relatively sparse lithics, mussel shell, bone fragments, and small burned rocks. The feature is interpreted as either an expedient hearth or a rake-out pile from an adjacent hearth.

The ash/charcoal stain (F 2A, 41CV97) consisted of a 75 cm diameter circle of light gray ash with a maximum thickness of approximately 22 cm contained within a larger burned rock midden (F 2). The ash lens contained a variety of cultural detritus, including relatively small burned rocks, burned and unburned bone fragments, mussel shell, charcoal, and two Scallorn projectile points. Because the feature appeared to have a flat base, it is tentatively interpreted as a dump-pile derived from cleaning of a hearth, but it is possible that it actually represents a locus of burning. In either case, the preservation of the feature suggests that it was rapidly buried by cultural processes forming the midden. This rapid burial is most consistent with the dump theory of midden formation, because any of the other postulated models imply at least a moderate period of subaerial exposure which would have probably resulted in dispersal of the ash.

8.3.6 Occupation Zones

Two occupation zones were identified during the latter phase of testing. This terminology was implemented during Phase 2 testing to describe stratigraphically discrete--and occasionally spatially discrete--accumulations of cultural material and organic enrichment. Similar features identified during Phase 1 testing were typically and unsatisfactorily classed as middens, although the thickness and density of cultural material in general and burned rock in particular was much less than characteristic of middens in general. The term occupation zone was implemented to alleviate discomfort with the inclusion of these features in the midden class, but was implemented only for new features discovered during Phase 2; no attempt was made to reclassify features defined during Phase 1.

Two occupation zones were identified during Phase 2 investigations. The first was encountered in shelter B, 41BL844, from 20 to 43 cmbs. It consisted of a localized zone of black, organic-rich silt loam containing abundant debitage, burned and unburned bone, a single mussel shell, burned rock, and four arrow points. Estimated dimensions of the lens were 10 m x 1.5 m. A distinct lateral contact between the feature and non-feature shelter fill suggests that the feature occupies a former depression in the paleotopography of the shelter fill, although it is unclear whether this depression was of cultural or natural origin.

The other occupation zone consisted of a broad scatter of cultural material (estimated at 30 x 30 m) interstratified in Holocene fan deposits at 41CV99. This feature was encountered in two discrete, widely spaced test pits from 10-20 cm bgs. The feature included lithics, bone, mussel shell, and some burned rock in an organic-rich matrix.

8.3.7 Miscellaneous Features

Several other feature types, of which only one example each was identified, were described during testing on Fort Hood. One of these (F 18, 41CV97) consisted of a burned stump or root embedded in the Cowhouse Creek terrace. Although broadly associated with cultural material, this vertically-oriented burned zone probably has little cultural significance. Similarly, F 3 on 41CV1400, a historic rock wall, has no relation to prehistoric cultural activity.

At 41CV124, a modified bedrock depression, F 1a, was discovered beneath the depression on a burned rock mound (F 1). This roughly cone-shaped depression measured approximately 1 m in diameter at the top, 25 cm in diameter at the base, and 58 cm deep. It is primarily filled with dense burned rock mound matrix, but includes a veneer of well-developed Bt horizon at the base and partially lining the walls. This feature appears to represent a natural solution depression in the upland bedrock that was modified and shaped to contain a firepit that served as the central focus of the mound. Although several other mounds were also associated with centralized bedrock pits, this feature was the only one given a discrete feature number.

8.4 ARTIFACT CONTENT OF FEATURES

8.4.1 Mounds, Middens, Concentrations, and Pavements

Apart from the differences in form, composition, and location outlined previously, the strongest argument for the asserted distinction between the features on Fort Hood that we term burned rock mounds and those that we term burned rock middens concerns differences in artifact content. Table 8.3 illustrates the total return and return per m^3 of lithics, bone, shell, and burned rock from the mounds, middens, concentrations, and pavements addressed through excavation during the testing of the 119 sites. As can be seen, with the exception of the rock itself, burned rock middens typically contain from one to two orders of magnitude more cultural detritus than is contained in burned rock mounds. Burned rock, in contrast, is approximately four times as prevalent in mounds as it is in middens. This implies that the two types of features represent distinct and separate phenomena formed by very different cultural processes. While burned rock middens are typically replete with a variety of cultural detritus and contain a very high fine matrix-to-rock ratio, burned rock mounds are typically much more artifact poor and contain much more closely packed rock.

Despite the difference in artifact content, both mounds and middens show a similar mean rock weight (0.17 kg in middens vs. 0.14 kg in mounds), suggesting that the size of rock no longer considered useful and therefore subject to discard was similar. If we assume that the rocks were used as heat sinks to prolong elevated temperatures in the respective features, and discarded when they fragmented to such an extent that this function was no longer efficient, the similarity in rock size between mounds and middens implies that the discard threshold, and therefore the requirements for thermal properties of the rocks, was similar in mounds and middens.

Burned rock concentrations show relatively sparse return in all categories in comparison to the other features. Lithic return is low, but slightly exceeds the return from the mounds. Faunal remains are also roughly in the same range as the return from mounds. The average weight and count of burned rocks per unit volume is lower than all the other

Table 8.3 Total Recovery and Average Recovery per m^3 of Major Artifact Classes from Burned Rock Mounds, Middens, Concentrations, and Pavements.

		Burned Rock Feature Type			
		concentration	midden	mound	pavement
Total Features Tested		47	55	18	4
Total Volume Excavated (m^3)		5.80	42.45	13.15	0.33
Lithics	Total	1,281	51,458	2,361	66
	Avg. per m^3	221	1,212	180	203
Bone	Total	153	4,555	39	11
	Avg. per m^3	26	107	3	34
Mussel Shell	Total	44	863	106	159
	Avg. per m^3	8	20	8	489
Burned Rock	Total kg	744.3	7,182.70	8,295.20	102
	Avg. kg per m^3	128.39	169.19	631.05	313.85
	Total Count	3,126	42,450	57,514	351
	Avg. Count per m^3	539	1,000	4,375	1,080

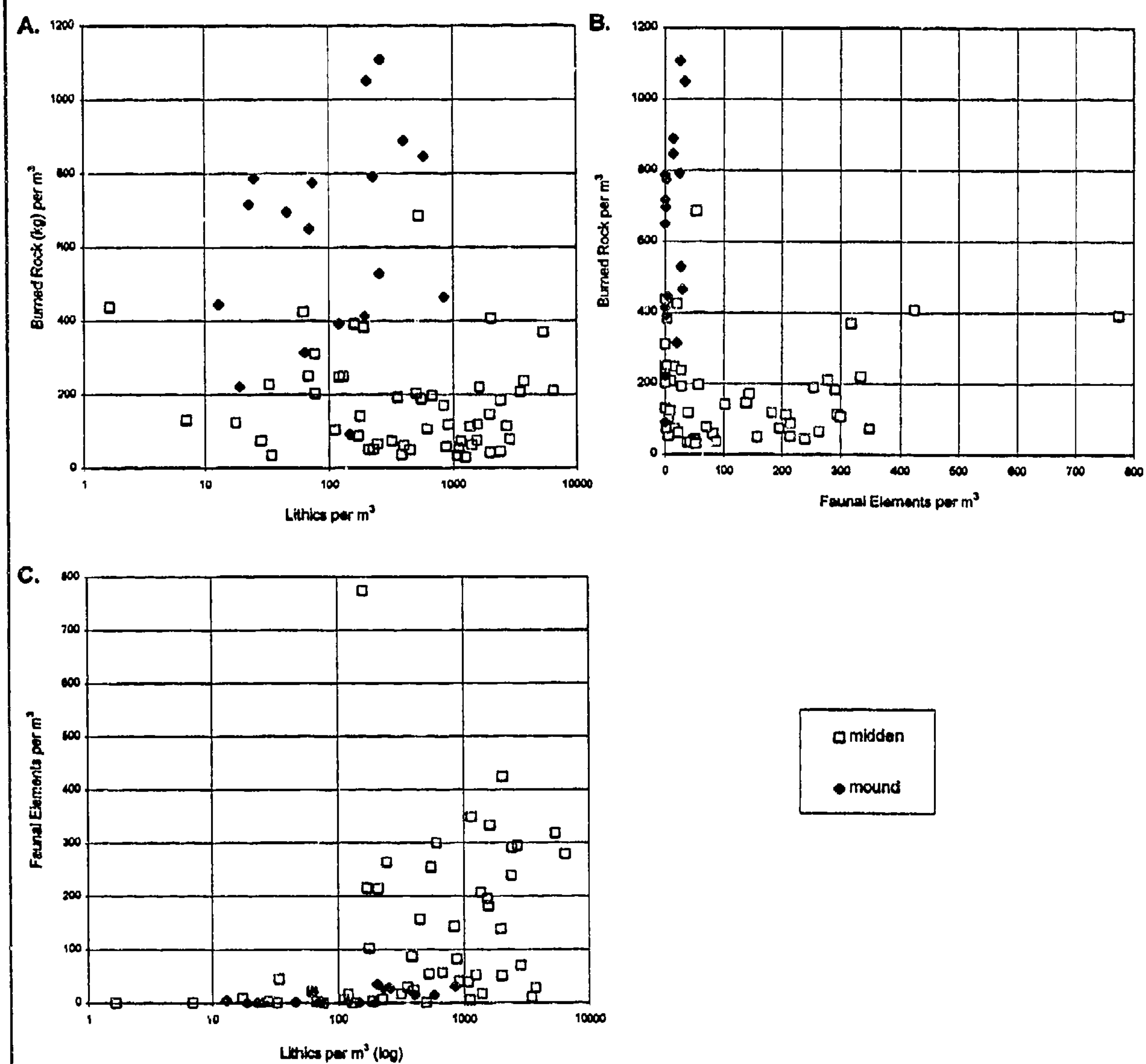
feature types, but the rocks are considerably larger on average (mean = 0.24 kg) than the rocks recovered from the mounds and middens. This suggests that rocks contained in the concentrations were probably not utilized as intensively as the rocks in the mounds and middens, and that the incorporation of the rocks into the features was probably more a function of feature abandonment than of deliberate discard of rocks that had fractured into pieces too small to function effectively.

Although the sample is small, pavements also show a tendency to contain considerably larger rocks than do middens and mounds (mean = 0.29 kg). In this case, the explanation is clearly that the rocks do not show the same type of discard threshold because they were not intentionally discarded. Rather, the structure of the pavements clearly implies hat the rocks are still in spatial arrangements into which they were intentionally placed, and the feature as a whole was abandoned. Because three of the four identified pavements are contained within larger burned rock middens, this abandonment of the feature does not necessarily imply that the activities represented were discontinued, only that the features were enveloped and buried by accumulating detritus.

Although the association between pavements and middens is strong, the types of cultural detritus recovered from the two features is distinctly different. Lithics, in particular, are much less common in the pavements than in midden matrix as a whole, and bone is also noticeably more scarce. Mussel shell, in contrast, occurs in anomalously high numbers; 24 times the frequency of middens and more than 60 times the frequency of mounds and concentrations. This suggests that, although pavements are frequently contained in middens, they probably represent specialized functions, one of which was preparation of shellfish.

In order to provide for comparison of variability among the mound and midden populations, a standardized, comparable measure of the lithic, faunal, and burned rock return from each individual feature was calculated and graphed (Figure 8.3). The scatterplots indicate a clear, albeit imperfect, separation between the two data clouds. This relationship is probably best illustrated in the scatterplot of lithic content vs. burned rock content (Figure 8.3-A). Middens are overwhelmingly dominant in the area of the graph where lithics exceed 100 per m^3 and burned rock weights are less than 400 kg/m^3 (two exceptions are apparent, but neither exceeds 150 lithics/m^3). Similarly, mounds are dominant in the area of the graph where lithics exceed 1,000 per m^3 and burned rock weights exceed 600 kg/m^3 (here again, one exception is apparent, but this feature exhibits a noticeably higher burned rock to lithic ratio than any of the comparable mounds). In between these two archetypal clusters, there is an area of overlap where examples of both feature types are common, indicating that there is a transition zone between the two "archetypes." Finally, there is one example each of a feature of one type that exhibits characteristics typical of the other type: F 5 at 41CV1023 (designated as a midden) contains over 400 kg of burned rock and less than two lithics per m^3, while F 1 at 41CV1423 (designated as a mound) contains only about 90 kg of burned rock and over 140 lithics per m^3. This is probably an indication that the distinction based relief, which was used to classify the features, is a convenient but imperfect indicator of content and function; in particular, F 5 at 41CV1023 appears to be much more similar to the mound class.

Nevertheless, the data clearly indicate that the artifact content of the two feature classes is distinctive on the whole. This difference is also reflected in the faunal data, as Figure 8.3-B and 8.3-C illustrate. Here the trend is expressed as a paucity of faunal remains (bone and mussel shell) in the mounds. Of the 18 mounds investigated, none exhibited more than 34 elements per m^3, and the majority (55%) contained 5 elements/m^3 or less. While there were a number of middens that also contained little faunal material, the majority (roughly 73%) contain more than 100 elements per m^3. Interestingly, mussel shell, which one would



* Count exclusive of microdebitage (log/linear.

** Count of fragments of appreciable size.

Figure 8.3 Scatterplots of Normalized Artifact Frequencies from Burned Rock Middens and Mounds: (A) Burned Rock (kg) vs. Lithics*; (B) Burned Rock (kg) vs. Faunal Remains**; (C) Faunal Remains vs. Lithics*.

logically expect to occur much more commonly in features situated near streams (i.e., middens) than features situated in the uplands (i.e., mounds), only occurs at slightly greater frequency in middens than in mounds. This suggests that mussels were frequently carried considerable distances for preparation, which possibly occurred in combination with vegetal foodstuffs obtained from the uplands.

It is important to state at this point that we do not subscribe to the notion that there are in fact two, and only two, identifiable classes of features in Central Texas within the universe of features that have hitherto been referred to under the rubric burned rock midden. One of the principal impediments to interpretation of burned rock middens (and mounds) is the lack of a clear linkage between function on the one hand and morphology/artifact content on the other. We propose that while form follows function, attempts to explain middens as a class of features by identifying a single function, whatever that may be (e.g., acorn processing, sotol processing, cooking, roasting, dumping of hearth debris, etc.), are bound to fail because the range of morphological variability inherent in the features supports a polygenetic origin for burned rock features on Fort Hood, and in the broader Central Texas region. In other words, we suggest that all of the functional interpretations advanced in the literature to this point, and possibly additional functions that have yet to be postulated, have probably contributed to the formation of the variety of features in Central Texas that are commonly termed middens, but to varying degrees at different sites.

Thus, burned rock features represent material remains generated by complex human behavior, and the morphology and content of a given feature is a product of the relative importance and duration of a number of discrete types of activity, tempered by the character of available resources, the geomorphic setting, the edaphic environment, and the magnitude and trajectory of cultural and natural formation processes. While some features may result almost entirely from a single activity (whatever its nature), many more probably represent the combined influence of a dominant activity and a number of related or unrelated ancillary activities, and still others may represent a suite of activities in which none can be identified as dominant.

Given this hypothesis, one may question the validity of the subdivision of the feature type formerly considered as one (burned rock middens) into two discrete classes (mounds and middens) in this study. While surely not the final word, we believe that this subdivision is an essential first step that starts us down the road to a realistic appreciation of the range of variability in the features. Although variability has been noted a number of times previously (e.g., Hester 1970; Peter 1982), the persistence of the single term midden has served to deemphasize this variability, and much of the research in the field remains directed towards finding the answer to burned rock middens.

The following paragraphs detail the artifact return from the features addressed during this phase of testing at Fort Hood. Collectively, this summary demonstrates that the character of the artifact content in mounds is very different on average from that in middens on Fort Hood; however, it does not mean to imply that these are the only two valid subdivisions of the suite of features described. Rather, we believe that there are probably a number of valid (and possibly cross-cutting) subdivisions based on morphology and artifact content that would be analytically useful, including at least two discrete types of mounds (annular and domed) and an unknown number of different types of middens. Each of these undefined types, in turn, may represent a single activity or a suite of disparate activities performed with varying intensity, and tempered to varying degrees and in different ways by post-depositional formation processes. Thus, any increase in our ability to discriminate between different features on the basis of morphology and artifact content, and to talk about these differences with our peers in a mutually-intelligible manner, represents a step in the right direction. The distinction drawn here represents such a step.

The diagnostic projectile points (Table 8.4) and tools (Table 8.5) recovered from the features also suggest some interesting trends. Unsurprisingly, the overwhelming majority of points (94%) and tools (95%) were recovered from the artifact-rich middens. Although Middle Archaic points (e.g., Pedernales, Lange, Bulverde, Marshall) are a significant presence in the features, a variety of Late/Transitional Archaic and Late Prehistoric types form the bulk of the sample. This may either indicate that the features were accreting, albeit intermittently, throughout the Archaic and Late Prehistoric, or that collection and subsequent incorporation of heirloom points was common in the Late Archaic and Late Prehistoric (radiocarbon ages tend to support the former interpretation--see Section 7.3.6). Another very interesting characteristic is the very strong representation of Scallorn arrow points, diagnostic of Late Prehistoric I (Prewitt's [1981] Austin Phase), which contrasts sharply with the near absence of the later Toyah points (e.g., Perdiz, Cliffton) common in other settings on the fort (particularly rockshelters). Although Scallorn points are also common in rockshelters, the apparent abandonment of burned rock middens in the latter Late Prehistoric may indicate a substantive shift in site location and/or adaptive strategy by the Toyah people.

Only one projectile point (an untyped dart point) was recovered from the burned rock pavements, but the association of these features with the middens suggests that they may span a similar time range. The sparse sample of projectile points recovered from the upland mounds (see Table 8.4) includes specimens representing the Early Archaic, Middle Archaic, and Late Prehistoric, with no period dominating. A similar situation is apparent in the points from the concentrations, which span the Late Paleoindian through the Late Archaic.

The tool sample from the middens (see Table 8.5) exhibits considerable diversity, with scraping, cutting, chopping, and puncturing tools of both deliberate and expedient manufacture all occurring in appreciable numbers. The most common tools are late-stage bifaces (which may often represent finished cutting tools), preforms, utilized flakes, unifacial cutting and scraping tools, and bifaces in all stages of manufacture. No major tool type associated with any of the other feature types is missing from the midden assemblage, suggesting that the toolkit represents a full range of activities.

In contrast, only a limited range of tools, consisting of a few bifaces, one scraper, a few modified flakes, and one chopper were recovered from the upland mounds. Concentrations also yielded a smaller range of tools, including bifaces in various stages of manufacture, one crushing/abrading tool, and a few unifacial cutting and scraping tools. The tool sample recovered from the pavements was limited to a single early stage biface.

Faunal remains are more common from middens than from any other context investigated on the fort during the testing phase, save a few of the richer rockshelters. Table 8.6 illustrates aggregate faunal return from the mounds, middens, concentrations, and pavements. Over 91% of the material recovered from the large burned rock features were associated with middens. Although a variety of taxa are represented, the majority of the sample is from relatively large animals, including deer and bison. While some of the wide variety of smaller animals probably represent intrusives, it is likely that many of the smaller animal remains also represent economic activity. In contrast, faunal recovery from the concentrations and pavements was relatively low, although the small sample of pavements limited the potential for recovery. In both cases, most identifiable remains represent relatively large animals (deer, other Artiodactyls, and deer-sized animals). Although a few small fragments were recovered, no identifiable bone was obtained from any of the mounds investigated, suggesting that faunal processing was at best an ancillary activity associated with this type of feature.

Table 8.4 Recovery by Type of Projectile Points from Burned Rock Mounds, Middens, Concentrations, and Pavements.

		Burned Rock Feature Type				
Period	Point Type	concentration	midden	mound	pavement	Total
Paleo/Early Archaic	Angostura	1	0	0	0	1
	Uvalde	0	0	1	0	1
	Subtotal	*1*	*0*	*1*	*0*	*2*
Middle Archaic	Alamagre	0	1	0	0	1
	Bulverde	0	5	0	0	5
	Kent	0	2	0	0	2
	Lange	0	6	0	0	6
	Marshall	0	5	0	0	5
	Morrill	0	2	0	0	2
	Nolan	1	1	1	0	3
	Pedernales	0	24	0	0	24
	Palmillas	0	1	0	0	1
	Subtotal	*1*	*47*	*1*	*0*	*49*
Late/Transitional Archaic	Castroville	0	12	0	0	12
	Darl	0	15	0	0	15
	Edgewood	0	5	0	0	5
	Ellis	0	3	0	0	3
	Ensor	1	8	0	0	9
	Godley	0	1	0	0	1
	Marcos	0	3	0	0	3
	Matamoros	0	1	0	0	1
	Montell	0	4	0	0	4
	Subtotal	*1*	*52*	*0*	*0*	*53*
Late Prehistoric	Bonham	0	2	0	0	2
	Bulbar Stemmed	0	1	0	0	1
	Catan	0	1	0	0	1
	Chadbourne	0	1	0	0	1
	Cliffton	0	1	0	0	1
	Fresno	0	1	0	0	1
	Sabinal	0	1	0	0	1
	Scallorn	0	26	1	0	27
	Starr	0	1	0	0	1
	Yarbrough	0	0	1	0	1
	Young	0	4	0	0	4
	Subtotal	*0*	*39*	*2*	*0*	*41*
Unclassified	Indeterminate	0	2	0	0	2
	Other Arrow	0	24	0	0	24
	Other Dart	2	53	3	1	59
	Other Point	1	4	0	0	5
	Subtotal	*3*	*83*	*3*	*1*	*90*
	Total	**6**	**221**	**7**	**1**	**235**

Table 8.5 Recovery by Class of Lithic Tools from Burned Rock Mounds, Middens, Concentrations, and Pavements.

Tool Class	Tool Type	Burned Rock Feature Type				Total
		concentration	midden	mound	pavement	
Biface	early stage	0	32	0	0	32
	middle stage	2	46	2	0	50
	late stage	3	112	6	0	121
	finished	1	74	1	0	76
	preform	0	2	0	0	2
	undefined[1]	0	0	1	0	1
Scraper	end	0	17	0	0	17
	side	2	22	1	0	25
	complex	0	3	0	0	3
Modified Flake	edge modified	2	110	1	0	113
	utilized	5	289	8	0	302
	graver	0	23	1	0	24
	denticulate	0	1	0	0	1
	spokeshaver	2	11	0	0	13
	undefined[1]	0	1	0	0	1
Gouge	Clear Fork Type A	0	2	0	0	2
	Clear Fork Type B	0	1	0	0	1
Perforating Tool	drill	0	8	0	0	8
	stone awl	0	1	0	0	1
Hammerstone		0	6	0	0	6
Crushing/Abrading Tool		1	14	0	0	15
Chopper	Type A	0	11	0	0	11
	Type B	0	7	1	0	8
Total		**18**	**793**	**22**	**0**	**833**

[1] artifact lost before reclassification

Floral remains from the middens (Table 8.7) are represented in very low numbers, possibly because only a limited suite of the collected and processed flotation samples were analyzed (see Section 4.2). Surprisingly, the majority of recovered remains are uncarbonized, suggesting that they represent intrusive materials. Carbonized remains of probable cultural affiliation include one charred hackberry seed, a charred juniper needle, a charred seed from *Opuntia* sp. cactus, and burned oak and unidentified wood fragments.

In short, while there does seem to be some preservation of floral remains in the middens, more work is necessary before any suggestions can be made concerning its significance. Similarly, floral remains were also recovered in low frequency from the concentrations, and less 20% of the recovered sample was carbonized. The identified carbonized material consisted of oak and juniper wood, which presumably represents a fuel. The floral remains from the mounds were limited to a few uncarbonized seeds, nuts, and wood fragments, all of which are probably intrusive and thus have no bearing on function. Similarly, no carbonized floral remains were recovered from the pavements.

Table 8.6 Recovery by Taxon and Element of Faunal Remains from Burned Rock Mounds, Middens, Concentrations, and Pavements.

Common Name	Taxon	Element	concentration	midden	mound	pavement
Bison	Bos/Bison	Permanent tooth	0	3	0	0
		Tibia	0	2	0	0
		Tooth	0	8	0	0
Deer	*Odocoileus* sp.	Antler	0	8	0	0
		Astragalus	0	2	0	0
		Calcaneus	0	3	0	0
		Distal phalange	0	7	0	0
		Fourth carpal	0	1	0	0
		Fused central carpal	0	2	0	0
		Humerus	0	3	0	0
		Mandible	0	2	0	0
		Metapodial	0	1	0	0
		Metatarsal	0	2	0	0
		Middle phalange	0	1	0	0
		Pelvis	0	1	0	0
		Permanent tooth	0	20	0	1
		Phalange	0	4	0	0
		Proximal Phalange	0	1	0	0
		Radius	0	5	0	0
		Scapula	0	2	0	0
		Tibia	0	5	0	0
		Tibiotarsus	0	1	0	0
		Tooth	2	21	0	0
		Ulna	0	1	0	0
		Other	0	1	0	0
Pronghorn	*Antilocapra americana*	Radius	0	1	0	0
		Tooth	0	1	0	0
Even-toed Ungulates	Artiodactyla	Accessory carpal	0	1	0	0
		Astragalus	0	3	0	0
		Calcaneus	0	1	0	0
		Cervical Vertebra	0	1	0	0
		Cranium	0	1	0	0
		Distal phalange	0	1	0	0
		Femur	0	5	0	0
		Fused 2&3rd carpal	0	3	0	0
		Fused 3&4th carpals	0	2	0	0
		Fused 3&4th metata	1	28	0	0
		Humerus	0	7	0	0
		Mandible	0	3	0	0
		Metapodial	0	16	0	0
		Metatarsal	0	1	0	0
		Middle phalange	0	7	0	0
		Pelvis	0	2	0	0
		Permanent tooth	0	1	0	0
		Phalange	0	1	0	0
		Proximal Phalange	0	15	0	0
		Radius	0	4	0	0
		Rib	0	1	0	0
		Scapula	0	1	0	0
		Thoracic vertebra	0	1	0	0
		Tibia	0	8	0	0
		Tooth	0	2	0	0
		Ulna	0	3	0	0
		Other	0	6	0	0
		Vertebra	0	6	0	0

Table 8.6 Continued.

Common Name	Taxon	Element	concentration	midden	mound	pavement
Even-toed Ungulates	Artiodactyls (med)	Astragalus	0	1	0	0
		Humerus	0	4	0	0
		Lateral malleolus	0	1	0	0
		Long bone	0	3	0	0
		Mandible	0	3	0	0
		Metacarpal	0	1	0	0
		Metapodial	0	12	0	0
		Metatarsal	1	4	0	0
		Pelvis	0	1	0	0
		Phalange	0	8	0	0
		Radius	0	1	0	0
		Rib	0	1	0	0
		Scapula	2	5	0	0
		Sesamoid	0	2	0	0
		Tibia	1	4	0	0
		Tooth	0	3	0	0
		Ulna	1	0	0	0
		Vertebra	0	3	0	0
Raccoon	*Procyon lotor*	Humerus	0	1	0	0
		Permanent tooth	0	1	0	0
Striped skunk	*Mephitis mephitis*	Tibia	0	1	0	0
Coyote/Wolf/Fox/Dog Family	*Canis* sp.	Humerus	1	0	0	0
		Mandible	0	3	0	0
Carnivores	Carnivora	Permanent tooth	0	1	0	0
		Tooth	0	1	0	0
Bison-sized Mammals	Mammalia (very lg)	Indeterminate	0	5	0	0
		Long bone	0	1	0	0
		Rib	0	1	0	0
		Vertebra	0	1	0	0
Deer/Bison-sized Mammals	Mammalia (lg/vlg)	Indeterminate	1	136	0	0
		Long bone	15	673	0	0
		Mandible	0	2	0	0
		Metapodial	0	2	0	0
		Rib	2	10	0	0
		Scapula	0	2	0	0
		Tooth	0	2	0	0
		Vertebra	0	19	0	0
Dog/Deer-sized Mammals	Mammalia (med/lg)	Carpal/Tarsal	0	1	0	0
		Cranium	0	17	0	0
		Indeterminate	36	1962	0	8
		Long bone	4	113	0	0
		Mandible	1	4	0	0
		Podial	0	1	0	0
		Rib	0	8	0	0
		Scapula	0	1	0	0
		Tooth	0	3	0	0
		Vertebra	0	14	0	0
Dog-sized Mammals	Mammalia (medium)	Cranium	0	1	0	0
		Long bone	3	12	0	0
		Mandible	0	1	0	0
		Tibia	0	2	0	0
Rabbits & Hares	Leporidae	Carpal/Tarsal	0	18	0	0
		Cranium	0	7	0	0
		Deciduous tooth	0	1	0	0
		Femur	0	3	0	0
		Humerus	0	1	0	0
		Long bone	0	113	0	0

Table 8.6 Continued.

Common Name	Taxon	Element	concentration	midden	mound	pavement
Rabbits & Hares (con't.)	Leporidae (con't.)	Mandible	0	14	0	0
		Metapodial	0	4	0	0
		Pelvis	0	19	0	0
		Permanent tooth	0	1	0	0
		Phalange	0	1	0	0
		Radius	0	8	0	0
		Scapula	0	5	0	0
		Tibia	0	16	0	0
		Tooth	1	15	0	0
		Vertebra	0	5	0	0
Jackrabbit	*Lepus californicus*	Calcaneus	0	6	0	0
		Cranium	0	5	0	0
		Femur	0	18	0	0
		Humerus	0	16	0	0
		Mandible	0	6	0	0
		Pelvis	0	30	0	0
		Permanent tooth	0	1	0	0
		Radius	1	44	0	0
		Scapula	0	12	0	0
		Tibia	0	22	0	0
		Tooth	0	7	0	0
		Ulna	0	13	0	0
		Vertebra	0	9	0	0
Cottontail Rabbit	*Sylvilagus* sp.	Calcaneus	0	1	0	0
		Cranium	0	1	0	0
		Femur	0	11	0	0
		Humerus	0	15	0	0
		Mandible	1	7	0	0
		Metatarsal	0	1	0	0
		Metatarsal 3	0	1	0	0
		Pelvis	0	15	0	0
		Permanent tooth	0	4	0	0
		Radius	0	3	0	0
		Scapula	0	2	0	0
		Tibia	0	10	0	0
		Ulna	0	6	0	0
		Other	0	1	0	0
Wood Rats	*Neotoma* sp.	Humerus	0	1	0	0
Beaver	*Castor canadensis*	Tooth	0	1	0	0
		Zygomatic arch	0	1	0	0
Opossum	*Didelphis virgiania*	Humerus	0	1	0	0
Squirrel Family	Sciuridae	Mandible	0	1	0	0
		Permanent tooth	0	2	0	0
Plains Pocket Gopher	*Geomys bursarius*	Humerus	0	2	0	0
		Radius	0	1	0	0
Cotton Rats	*Sigmondon* sp.	Permanent tooth	0	1	0	0
Mice/Rats	Cricetidae (small)	Fused 2&3 carpals	0	1	0	0
Unidentified Rat-Sized Rodent	Rodentia (medium)	Humerus	0	1	0	0
		Scapula	0	1	0	0
Unidentified Mammals	Mammalia	Indeterminate	0	97	0	0
		Long bone	0	3	0	0
		Other	0	4	0	0
	Mammalia (micro/sm)	Long bone	0	2	0	0
	Mammalia (sm/med)	Cranium	0	2	0	0
		Indeterminate	1	41	0	0
		Long bone	16	54	0	0
		Metapodial	0	1	0	0

Table 8.6 Concluded.

Common Name	Taxon	Element	concentration	midden	mound	pavement
Unidentified Mammals (con't.)	Mammalia (con't.)	Pelvis	0	1	0	0
		Phalange	1	0	0	0
		Rib	0	1	0	0
		Ulna	0	1	0	0
		Unidentified	0	1	0	0
		Vertebra	0	1	0	0
	Mammalia (small)	Cranium	0	1	0	0
		Long bone	3	4	0	0
		Radius	0	1	0	0
		Vertebra	1	0	0	0
Turkey Vulture	Catharatidae	Coracoid	1	0	0	0
Unidentified Bird	Aves	Humerus	1	0	0	0
		Indeterminate	1	0	0	0
		Vertebra	2	0	0	0
Turkey-sized Birds	Aves (large)	Cervical Vertebra	0	1	0	0
		Indeterminate	4	0	0	0
		Long bone	0	3	0	0
		Tibiotarsus	0	0	0	1
Colubrid Snakes	Colubridea	Dorsal vertebra	0	1	0	0
Snakes	Serpentes	Vertebra	0	1	0	0
Toads & Frogs	Anura	Long bone	0	1	0	0
		Tibiofibula	0	1	0	0
Pond, Marsh & Box Turtles	Emydidae	Carapace	0	1	0	0
Turtles	Testudinata	Carapace	2	5	0	0
		Humerus	0	1	0	0
		Neural	0	1	0	0
		Peripheral	0	2	0	0
		Plastron	0	4	0	0
		Shell	0	19	0	0
Softshell Turtles	*Trionyx* sp.	Shell	0	1	0	0
Gar	*Lepisosteus* sp.	Ganoid scale	0	1	0	0
		Metacarpal	0	1	0	0
Fish	Osteichthyes (sm)	Cranium	0	1	0	0
	Osteichthyes	Cranium	0	1	0	0
		Indeterminate	0	1	0	0
Unidentified Vertebrates	Vertebrata	Indeterminate	46	471	39	1
		Long bone	0	6	0	0
		Shell	0	5	0	0
Mussels	*Amblema plicata*		2	148	4	32
	Amblema sp.		0	52	0	0
	Ambleminae		6	101	0	19
	Cyrtonaias sp.		0	4	0	0
	Lampsilinae		4	34	0	29
	Lampsilis hydiana		0	15	0	0
	Lampsilis sp.		6	27	0	0
	Lampsilis teres		0	4	0	0
	Leptodea fragilis		0	1	0	0
	Megalonaias nervosa		0	3	0	0
	Potamilus purpuratus		0	5	0	0
	Quadrula apiculata		0	2	0	0
	Quadrula houstonensis		0	1	0	0
	Quadrula sp.		1	10	0	1
	Toxolasma texasensis		2	6	0	2
	Toxolasma sp.		0	6	0	0
	Tritigonia verrucosa		0	17	0	5
	Unionacea		23	427	102	71
Total			**197**	**5418**	**145**	**170**

Table 8.7 **Recovery by Taxon, Plant Part, and Carbonization Category of Floral Remains from Burned Rock Mounds, Middens, Concentrations, and Pavements.**

Common Name	Taxon	Part	Burned Rock Feature Type: concentration (n samples=9)	midden (n samples=51)	mound (n samples=8)*	pavement (n samples=1)	Total
Uncarbonized							
Ashe juniper (colloq. cedar)	*Juniperus ashei*	Leaf	0	1	0	0	1
		Seed	0	1	0	0	1
bedstraw	*Galium* sp.	Root	1	0	0	0	1
		Seed	3	1	0	0	4
cedar elm	*Ulmus crassifolia*	Fruit	0	1	0	0	1
croton	*Croton* sp.	Seed	0	0	1	0	1
	Indeterminate (soft wood)	Wood	0	2	0	0	2
goosefoot	Chenopodiacea	Seed	0	1	0	0	1
grass (indeterminate)	Poaceae	Seed	0	0	1	0	1
hackberry	*Celtis* sp.	Seed	6	68	0	0	74
		Wood	0	1	0	0	1
	Indeterminate (hardwood)	Wood	1	2	0	0	3
hickory	*Carya* sp.	Nut	0	1	0	0	1
unknown	Indeterminate	Bark	0	2	0	0	2
		Fruit	0	1	0	0	1
		Indeterminate	1	1	0	0	2
		Root	0	3	0	0	3
		Seed	0	5	0	0	5
		Stem	0	1	0	0	1
		vesicular mtl.	0	1	0	0	1
		Wood	2	5	0	0	7
	Indeterminate (hardwood)	Wood	1	2	0	0	3
	Indeterminate (soft wood)	Wood	0	2	0	0	2
juniper (colloq. cedar)	*Juniperus* sp.	Flower	0	1	0	0	1
		Leaf	0	1	0	0	1
		Seed	0	7	0	0	7
		Wood	0	3	1	0	4
leguminous tree	Fabaceae	Seed	0	2	0	0	2
lily family	Liliaceae	Bulb	0	1	0	0	1
live oak	*Quercus* sp.	Acorn	0	0	1	0	1
		Nut	0	2	0	0	2
		Wood	0	1	0	0	1
netleaf hackberry	*Celtis reticulata*	Seed	0	0	0	1	1
indeterminate oak	*Quercus* sp.	Wood	1	4	0	0	5
pepper vine	*Ampelopsis* sp.	Seed	0	0	1	0	1
sedge family	Cyperaceae	Seed	0	1	0	0	1
white oak	*Quercus* sp.	Wood	0	1	0	0	1
willow group	*Salicaceae* sp.	Wood	0	1	0	0	1
Subtotal			*16*	*127*	*5*	*1*	*149*
Carbonized							
Ashe juniper (colloq. cedar)	*Juniperus ashei*	Leaf	1	1	0	0	2
indeterminate	Indeterminate	Wood	0	2	0	0	2
live oak	*Quercus* sp.	Wood	2	3	0	0	5
netleaf hackberry	*Celtis reticulata*	Seed	0	1	0	0	1
prickly pear/cholla cactus	*Opuntia* sp.	Seed	0	1	0	0	1
Subtotal			*3*	*8*	*0*	*0*	*11*
Total			**19**	**135**	**5**	**1**	**160**

* counts also include additional seeds identified individually during the burned rock mound study

8.4.2 Hearths

Table 8.8 lists the cultural material associated with each of the 70 identified hearths. Within the artifact assemblage from the Type 1 (flat, angular rock/cobble layered) hearths, lithic debitage comprised greater than 60% of all recovered items overall, although four (25%) yielded no debitage. The disproportionate numbers of non-cortical flakes suggests that early stages of lithic reduction were typically not associated with these hearths. Most recovered tools were expedient cutting and scraping implements; however, 66% of the recovered tools came from a single feature (41BL154, F 1), and approximately 70% of the investigated Type 1 hearths yielded no tools at all. Similarly, nine of the 12 recovered projectile points were associated with one feature (41BL567, F 1). A variety of faunal remains were recovered from approximately 70% of the Type 1 hearths, with vertebrate remains occurring alone in four hearths, mussel shell occurring alone in five, and both mussel shell and bone occurring in only two. This suggests that the use-life of these features was probably relatively brief, although the variety of fuels indicated by recovery from F 1 at 41BL567 suggests that this generalization was not always true. Total burned rock recovery from the features ranged from 1 to 30 kg, with a mean individual rock weight of approximately 0.27 kg. This figure is noticeably larger than the apparent discard threshold in mounds and middens, but similar to the average size of rocks in concentrations. Interestingly, several of the largest, most rock-rich features (e.g., 41CV98, F 5; 41CV378, F 1; 41CV478, F 1) were almost completely devoid of associated artifacts, and exhibited mean individual rock weights up to 0.75 kg. Although the majority of Type 1 hearths probably represent expedient features constructed for light and warmth, and possibly to prepare one or two meals at a short-term campsite, the few large, rock-rich features appear to represent a different type of activity, albeit one that remains unknown.

Only one Type 2 (flat, slab layered) hearth was excavated during testing, and generalizations are therefore difficult. However, the association of a variety of shellfish species with this hearth (F 10, 41CV95) suggests that it was used for food preparation. Because the shell concentration was situated largely underneath the slab pavement, it is possible that this feature represents a technique of mussel preparation fossilized in place because the feature was never opened. If so, this may help explain why so few Type 2 hearths were identified.

Seven Type 3 (basin, little or nor rock) hearths were investigated during testing phase investigations. Once again, lithic debitage was the most common artifact type, occurring in five of the seven features. Lithic tools were recovered from three features, and one hearth (41CV1085, F 1) yielded four projectile points. As with the Type 1 hearths, lithic debitage was representative of later stage reduction (decortified flakes). Vertebrate remains were recovered from three of the hearths, and mussel shell occurred in two. Burned rock was absent in four of the features, one contained 20 small pieces (average = 0.075 kg), one contained five relatively large (average = 0.22 kg) pieces, and one contained a single 1 kg rock. Collectively, these features appear to represent activity foci at short-term to relatively long-term campsites, and thus contain artifacts that reflect a variety of activities.

Within the sample of 29 excavated Type 4 (basin, angular rock/cobble layered) hearths, four (14%) had no cultural material in association, lithic artifacts occurred in low frequency (<20) in 14 (48%), and three (10%) contained over 100 lithic artifacts each. Although there were a few exceptions, the high debitage features (>20 items) also tended to yield the vast majority of the lithic tools (96%). In contrast, almost 36% of the projectile points came from hearths with sparse debitage. Abundant faunal material was associated with many of the Type 4 hearths; while 31% lacked associated faunal material, 21% contained vertebrate remains but no shellfish, 17% contained shellfish but no faunal material, and 31% contained both shellfish and vertebrate remains. Of the features containing mussel shell, almost 55%

Table 8.8 Artifact Recovery from Hear Documented During Testing.

Site	Feature No.	Core	Debitage/ Microdebitage	Projectile Point	Other Lithic Tool	Plant Taxon (carbonized only)	Bivalve Taxon	Bone Taxon	Burned Rock (kg)	Burned Rock (count)	Excavated
Type 1: Flat, Angular Rock/Cobble Layered											
41BL154	2	0	137	0	10	-	-	Artiodactyl Mammalia(md/lg) *Odocoileus* sp. Testudinata	4.5	20	yes
41BL339	1	0	0	0	0	-	-	-	n/a	n/a	no
41BL567	1	0	505	9	2	*Carya illinoiensis* *Juglans* sp. *Juniperus* sp. *Quercus* sp.	Unionacea	Mammalia (md/lg) *Ostheichthyes* (sm)	26.7	12	yes
41CV95	3	0	10	0	0	-	Lampsilinae		3	11	yes
41CV95	4	0	6	1	1	-		Mammalia (md/lg)	19	99	yes
41CV95	7	0	0	0	1	*Quercus* sp.	Ambliminae Lampsilinae *Toxolasma texanensis* Unionacea	-	6	18	yes
41CV97	11	0	0	0	0	-	-	-	4	14	yes
41CV97	13	0	3	0	0	-	-	Artiodactyla *Odocoileus* sp. Mammalia (md/lg)	1	22	yes
41CV97	9	1	123	0	1	-	*Amblema plicata* Ambliminae Lampsilinae *Lampsilis hydiana* Unionacea	Mammalia (md/lg)	8	33	yes
41CV98	5	0	0	0	0	-	-	-	29	129	yes
41CV317	1	0	2	0	0	-	-	Mammalia (sm) Testudinata	5	21	yes
41CV378	1	0	4	0	0	-	-	-	30	44	yes
41CV478	1	0	0	0	0	-		-	21	28	yes
41CV478	2	0	0	0	0	-	-	-	109	97	yes
41CV960	1	0	4	1	0	-	Lampsilinae Unionacea	-	8	43	yes
41CV1105	2	0	0	0	0	-	-	-	n/a	n/a	no
41CV1129	1	0	2	1	0	-	Unionacea	-	5.3	151	yes
41CV1136	6	0	1	0	0	-	-	-	7	33	yes
41CV1166	1	0	8	0	0	-	-	-	9	18	yes
Type 2: Flat, Slab Layered											
41BL538	1	0	0	0	0	-	-	-	n/a	n/a	no
41CV95	10	0	4	0	0	-	*Amblema plicata* *Amblema* sp. Ambleminae Lampsilinae *Quadrula* sp. Unionacea	-	14.5	25	yes

Table 8.8 Continued.

Site	Feature No.	Core	Debitage/ Microdebitage	Projectile Point	Other Lithic Tool	Plant Taxon (carbonized only)	Bivalve Taxon	Bone Taxon	Burned Rock (kg)	Burned Rock (count)	Excavated
Type 3: Basin, Little or No Rock											
41BL567	2	0	0	0	0	-	-	-	0	0	yes
41CV97	16	0	66	0	1	*Quercus* sp.	-	Artiodactyla Mammalia (md/lg)	1.5	20	yes
41CV97	17	0	7	0	0	-	-	-	0	0	yes
41CV97	4	0	4	0	0	*Ulmus* sp.	-	Mammalia (md/lg) Mammalia (v lg)	0	0	yes
41CV97	5	0	229	0	3	*Quercus* sp.	Lampsilinae	Artiodactyla Mammalia (md/lg) Mammalia (lg/v lg)	1	1	yes
41CV1085	1	0	177	4	3	-	*Quadrula housonensis*	-	1.1	5	yes
41CV1200	3	0	0	0	0	-	-	-	0	0	yes
Type 4: Basin, Angular Rock/Cobble Layered											
41BL339	4A	1	22	0	2	*Quercus* sp.	Ambliminae Lampsilinae *Lampsilis hydiana* *Lampsilis* sp. Unionacea	*Odocoileus* sp. Mammalia (md/lg)	28	62	yes
41CV88	2	0	4	1	1	-	-	-	9.5	48	yes
41CV95	5	0	19	1	0	*Quercus* sp.	-	-	0.5	2	yes
41CV97	12	0	0	0	0	-	Unionacea	Mammalia (md/lg)	34	75	yes
41CV97	15	0	2	1	0	-	-	Mammalia (md/lg)	0.5	2	yes
41CV97	7	0	36	0	6	-	-	*Antilocapra americana* Artiodactyla Mammalia (sm/lg)	27.3	127	yes
41CV98	4	0	13	0	0	-	*Lampsilis hydiana* *Lampsilis* sp. *Lampsilis teres* Unionacea	-	52.3	195	yes
41CV98	6	0	5	0	0	-	-	Mammalia (lg/vlg)	20	55	yes
41CV98	7	0	1	0	0	-	*Cyrtonaias* sp.	-	8.5	15	yes
41CV115	1	0	779	1	3	-	*Amblema* sp. Unionacea	Artiodactyla Aves (sm) Aves (lg) Mammalia (sm/vlg)	50.7	217	yes
41CV174	10	0	90	1	4	-	-	Artiodactyla	9	32	yes
41CV174	2	0	0	0	0	-	-	-	n/a	n/a	no
41CV174	4	0	0	0	0	*Carya* sp.	-	-	2	5	yes
41CV317	2	0	107	3	4	-	*Lampsilis hydiana* *Lampsilis* sp. Unionacea	Testudinata Mammalia (sm-vlg)	42	123	yes
41CV317	3	0	69	0	2	-	*Amblema plicata* *Lampsilis hydiana* *Lampsilis* sp. *Tritigonia verrucosa* Unionacea	Artiodactyla Mammalia (sm/vlg)	3.5	16	yes
41CV389	2	0	1	0	0	-	-	Mammalia (md/vlg)	1.5	11	yes
41CV389	3	0	10	0	0	-	*Amblema plicata* Amblema sp.	-	11.5	43	yes
41CV389	4	0	5	0	0	-	-	-	2	18	yes

Table 8.8 Concluded.

Site	Feature No.	Core	Debitage/ Microdebitage	Projectile Point	Other Lithic Tool	Plant Taxon (carbonized only)	Bivalve Taxon	Bone Taxon	Burned Rock (kg)	Burned Rock (count)	Excavated
Type 4: Basin, Angular Rock/Cobble Layered (con't.)											
41CV587	2	0	464	2	2	-	Unionacea	*Bos/Bison* Mammalia (md/lg)	76.5	229	yes
41CV918	1	0	0	0	0	-	-	-	6	12	yes
41CV960	2	0	57	0	0	-	Ambliminae Lampsilinae Unionacea	Mammalia (md/lg)	83	252	yes
41CV1027	3	0	1	1	0	-	-	-	28.9	72	yes
41CV1038	3	0	24	2	1	-	-	*Bos/Bison* Mammalia (md/vlg)	29.3	56	yes
41CV1038	4	0	7	0	0	*Quercus* sp.	-	Mammalia (md/lg)	35	105	yes
41CV1038	6	0	0	0	0	-		-	29.3	99	yes
41CV1105	1	0	78	0	0	-	*Amblema plicata* Ambliminae Lampsilinae Unionacea	-	17	46	yes
41CV1105	4	0	14	1	0	-	-	-	1	8	yes
41CV1129	2	0	0	0	0	-	-	-	n/a	n/a	no
41CV1129	3	0	0	0	0	-	-	-	0.2	2	yes
41CV1200	2	0	9	0	0	-	Lampsilinae *Lampsilis* sp.	Mammalia (md/lg)	314.9	700	yes
41CV1471	1	0	31	0	1	-	*Cyrtonaias* sp. Unionacea	-	30	130	yes
Type 5: Basin, Slab Layered											
41BL339	2	0	37	0	0	-	Lampsilinae *Quadrula apulicata* *Toxolasma* sp.	Testudinata Mammalia (md/lg)	34	91	yes
41CV97	19	0	29	0	3	-	Unionacea	*Bufo* sp. *Odocoileus* sp. Mammalia (md/lg)	5	40	yes
41CV174	3	0	1	0	0	-	-	-	45	119	yes
41CV174	5	0	2	0	1	-	-	-	46	140	yes
41CV174	7	0	9	2	1	-	-	Artiodactyla *Odocoileus* sp. Mammalia (md/lg)	17	77	yes
41CV174	8	0	0	0	0	*Quercus* sp.	-	-	89.5	269	yes
41CV184	3	0	3	0	1	-	-	-	113.5	117	yes
41CV403	2	0	16	0	0	-	-	Mammalia (md/vlg)	26	86	yes
41CV1136	5	0	5	0	0	-	-	-	9.5	28	yes
41CV1391	2	0	16	1	0	*Quercus* sp.	-	-	10	218	yes
Type 6: Dispersed											
41CV97	10	0	49	0	2	-	-	*Castor canadensis* Mammalia (md/lg)	2.5	22	yes

contained a minimum of two distinct species. Burned rock content varied tremendously, with total weights ranging from 0.2 kg to 314.9 kg, with an average total of approximately 33 kg per feature. Individual rocks were relatively large on average (0.35 kg), particularly in the larger basins. Collectively, these features appear to represent general activity foci at short-term to relatively long-term camps.

The relatively labor-intensive construction of Type 5 (basin, slab-lined) hearths suggests that they were probably designed for repeated and/or intensive use. However, the artifact return from the 11 tested features is remarkably low, particularly in comparison to Type 4 hearths. One of the Type 5 hearths was devoid of cultural material (other than burned rock and charcoal), and none yielded more than 40 lithic artifacts. Vertebrate remains were present in four of the features, mussel shell was present in two, and faunal remains were absent in six (60%). Burned rock content varied considerably, with one feature containing only 5 kg of rock, and another containing over 113 kg. Interestingly, the two most massive features (those containing approximately 90-120 kg of burned rock) were almost devoid of other cultural material. Therefore, artifact return suggests that Type 5 hearths were used relatively lightly or for short periods. However, this conclusion does not make sense given the level of construction effort involved, and it is considered likely that such features were probably actively maintained and that ash and detritus resulting from use was regularly removed and dumped elsewhere.

As with Type 2 hearths, only one example of a Type 6 hearth was excavated during testing, and generalization is therefore difficult. The one example yielded faunal remains (including beaver) and a moderate number of lithics. It appears to represent a relatively hot, expedient hearth used for a short period.

8.5 GEOGRAPHIC SETTING OF FEATURES

8.5.1 Mounds, Middens, Concentrations, and Pavements

The 119 tested sites included 55 middens, 18 mounds, 4 pavements, and 32 concentrations. Although the sample of pavements is so low that no conclusion is possible, and concentrations appear to be represented relatively well in a variety of environments, mounds and middens are clearly distributed differently across the landscape (Table 8.9). Mounds are located exclusively in upland settings, with the vast majority situated in stable to erosional contexts. The few mounds in depositional settings are situated on upland slopes and benches, particularly in the Turkey Run site group, and are subject to low-order colluvial and slopewash sedimentation derived from thin sandy interbeds in the limestone. In contrast, the middens are located primarily in depositional lowland settings, with a few situated in the uplands either on colluvial benches or in the Paluxy sandstone environment. The majority of middens (84%) are situated either within Holocene alluvial deposits, Holocene alluvial fan deposits, Holocene colluvial toeslope deposits, or spanning the alluvial/colluvial boundary at the margin of valleys. Burned rock concentrations are the most equitably distributed, with 59% occurring in the depositional lowlands (primarily terrace settings), 7% occurring in depositional settings in the uplands (including one feature each situated on a midslope bench, a Paluxy upland, and a rockshelter), 32% occurring in stable upland settings, and 2% (i.e., one feature) occurring on a stable Pleistocene terrace. All four burned rock pavements were associated with Holocene terraces, and three were contained within larger middens.

8.5.2 Hearths

The majority of hearths (n=55; 79%) were situated on (or rather, buried within) open alluvial terraces. Four additional hearths were discovered buried in the Paluxy Sand deposits in the uplands, one was contained within alluvial fan deposits, three were

Table 8.9 Percentage Breakdown by Landscape Position and Depositional Setting for Burned Rock Mounds, Middens, Concentrations, and Pavements.

		Burned Rock Feature Type			
		concentration (n=47)	midden (n=55)	mound (n=18)	pavement (n=4)
Depositional Settings					
Lowland	alluvial fan	0.0%	10.7%	0.0%	0.0%
	colluvial toeslope	4.9%	26.8%	0.0%	0.0%
	Holocene terrace	53.7%	46.4%	0.0%	100.0%
	Subtotal	*58.5%*	*83.9%*	*0.0%*	*100.0%*
Upland	midslope bench	2.4%	3.6%	10.5%	0.0%
	colluvial slope	0.0%	0.0%	5.3%	0.0%
	Paluxy substrate	2.4%	10.7%	0.0%	0.0%
	rockshelter	2.4%	0.0%	0.0%	0.0%
	Subtotal	*7.3%*	*14.3%*	*15.8%*	*0.0%*
Stable Settings					
Lowland	Pleistocene terrace	2.4%	1.8%	0.0%	0.0%
Upland	Manning/Killeen upland	31.7%	0.0%	84.2%	0.0%

situated on colluvial toeslopes, and seven were found within rockshelters. Examination of the distribution of different hearth types (Table 8.10) suggests that there is little difference between types, and that the construction style selected was probably not particularly dependent on local environment. Excluding Type 2 (flat, slab-layered) and Type 6 (dispersed) hearths (which are represented by samples so small that meaningful statistics are not possible to obtain), each of the different types are predominantly associated (ranging between 71% to 84% of the total number of each type investigated) with Holocene terrace deposits. If terraces and toeslopes are considered together, between 71% and 90% of each of the four principal types are accounted for. However, there are some differences apparent among those remaining features not stratified within terraces. The most common hearth types associated with rockshelters are Type 3 (basin, little or no rock), Type 1 (flat, with angular rock), and Type 4 (basin, angular rock), of which there are two examples each; Type 2 (flat, slab layered) is represented by one example. On Paluxy sites, the most common hearth type is the flat hearth with angular rock (Type 1), represented by two examples; Type 4 and Type 5 hearths are represented by one example each in this environment. On toeslopes, all hearths investigated exhibited a basin morphology (Type 4, n = 2; Type 5, n = 1). Collectively, these counts suggest that while all of the hearth types were routinely constructed on alluvial surfaces, there may have been a slight preference for one type over another in other environments, such as in the Paluxy substrate or colluvial toeslopes. However, it is probably more likely that these subtle differences are simply the result of an insufficient sample from these environments.

8.6 AGES OF THE TESTED BURNED ROCK FEATURES

8.6.1 Mounds, Middens, Concentrations, and Pavements

A total of 72 radiocarbon ages were obtained from 49 distinct large and/or amorphous burned rock features during the three study phases (Figure 8.4). The radiocarbon ages range from a low of 110 BP

Table 8.10 Percentage Breakdown by Landscape Position for Hearths Documented.

	Hearth Type					
	1 (n=19)	2 (n=2)	3 (n=7)	4 (n=31)	5 (n=10)	6 (n=1)
alluvial fan	5.3%	0.0%	0.0%	0.0%	0.0%	0.0%
colluvial toeslope	0.0%	0.0%	0.0%	6.5%	10.0%	0.0%
Holocene terrace	73.7%	50.0%	71.4%	83.9%	80.0%	100.0%
Paluxy upland	10.5%	0.0%	0.0%	3.2%	10.0%	0.0%
rockshelter	10.5%	50.0%	28.6%	6.5%	0.0%	0.0%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

to a high of 5240 BP. The majority (n=38; 53%) of assays were from midden deposits, while 29 (40%) were from the mounds, four (6%) were from burned rock concentrations, and one (1%) was from a burned rock pavement (this age, 3090 ± 100 BP, is not illustrated on the figure, but interestingly falls into the temporal gap centering on approximately 2900 BP). In addition, a total of 41 Rabdotus sp. snails were submitted for A/I analysis from five different mound contexts and 68 additional specimens were submitted from eight distinct midden contexts. While more ambiguous than the radiocarbon data (Chapter 9.0), regression of these shells with others of known radiocarbon rage does provide some additional chronometric information.

The absolute radiocarbon assays from the tested burned rock middens reveal periodic use of middens during the last 5,500 years BP. The majority of assays (55%) fall between 900 and 2500 BP; ten (26%) are greater than 3200 BP; and seven (18%) fall between 100 and 900 years BP. Perhaps significantly, there is a distinct gap between 3200 BP and 2500 BP, possibly suggesting a hiatus, or at least diminution, in the frequency of burned rock feature utilization. The clustered assays suggest a relatively intensive period of midden use at Fort Hood during the latter Archaic and earlier Late Prehistoric periods, which generally agrees with the recovered projectile point assemblage. The smaller A/I sample addressed eight different features, and yielded interpreted ages ranging from approximately 400 BP to 2700 BP (Appendix C).

The few radiocarbon assays from the burned rock concentrations exhibited two clusters centering around 1300 BP and 4600 BP. In addition, one epimerization estimate of approximately 1400 BP was obtained from a concentration, which fits well with the younger cluster. However, it is considered extremely unlikely that these few ages are representative of the ages of burned rock clusters as a whole, which almost certainly span a considerably longer period.

The 29 assays obtained from the mounds encompass only ten individual features, eight of which are represented by multiple assays. Collectively, these mounds date to between 200 to 4500 B.P, with 18 of the ages post-dating 2000 BP and 11 predating 2800 BP. In addition, age estimates based on A/I ratios of *Rabdotus* shells were obtained from five different mounds. These ages ranged from approximately 2700 to 5650 BP.

Collectively, the range of chronometric ages on mounds is considerably wider than is typically recognized in Central Texas (e.g., Prewitt 1981). Re[illegible]e of features also seems to occur, as the data indicate that one mound at 41BL743 was used at least three times between 640 to 3200 BP. Although the existing chronometric data is tantalizing, identification of periods of intensive mound use or abandonment will require additional data.

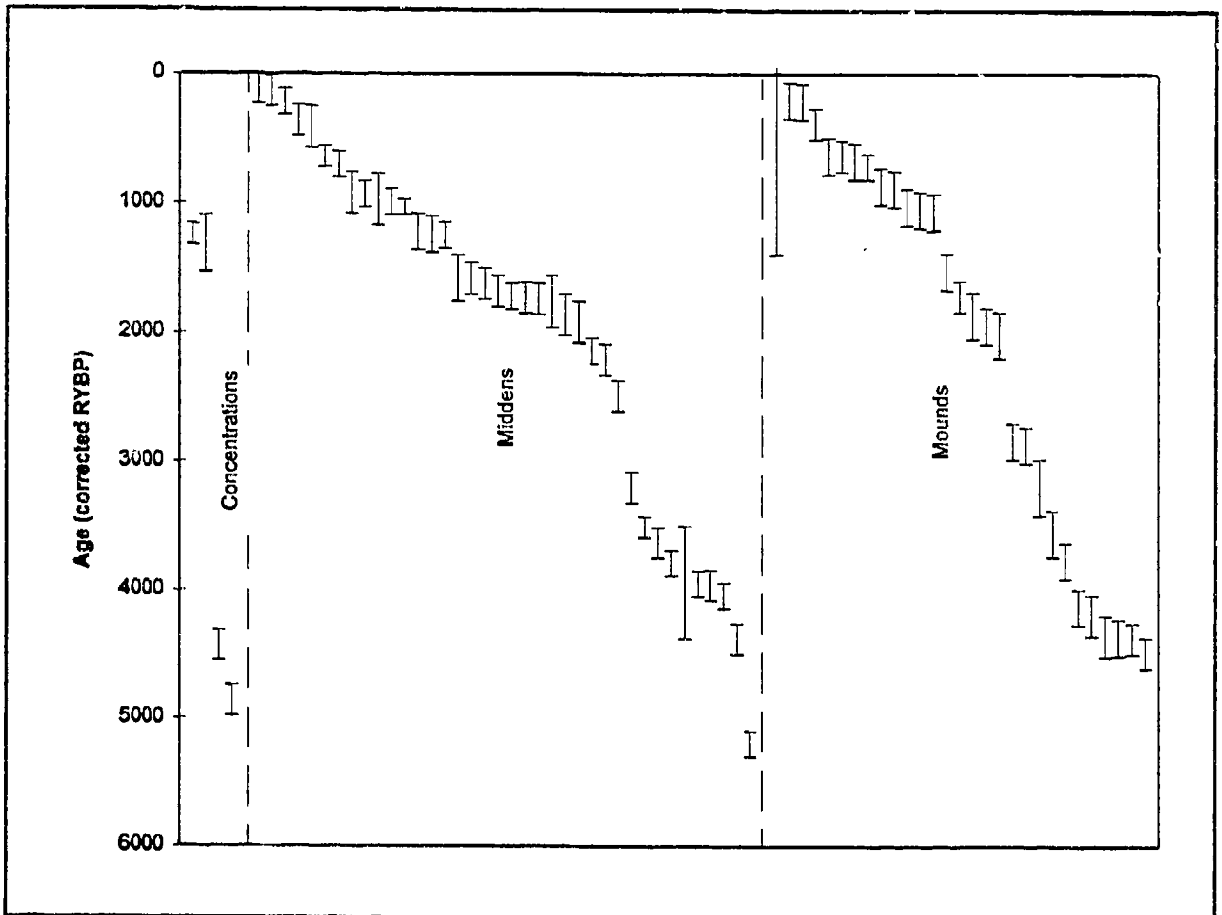


Figure 8.4 Radiocarbon Ages from Dated Burned Rock Mounds, Middens, and Concentrations (2 sigma spread, corrected).

8.6.2 Hearths

A total of 33 radiocarbon ages, ranging from approximately 250 to 8600 BP, were obtained from hearth features during testing. This represents approximately half (48%) of the hearths excavated during testing. Figure 8.5 illustrates the relationship between radiocarbon age and estimated diameter for the dated hearths (note that two Type 1 hearths are excluded from the plot because no reliable size estimate was possible). As the plot indicates, few obvious trends are apparent in the data. The majority of hearths are less than 2,000 years old, and there is no clear preference for any particular hearth type during a specific time period.

A chronometric age was obtained from roughly half (47%) of the Type 1 hearths excavated during testing. With two exceptions, these hearths dated to Late Archaic through Late Prehistoric I (roughly 800-1500 BP, encompassing Prewitt's [1981] Driftwood and Austin Phases). One of the other two Type 1 hearths dates to approximately 2900 BP (i.e., Prewitt's Round Rock Phase of the Middle Archaic), while the other dates to approximately 8600 BP (i.e., late Paleoindian or Early Archaic).

No chronometric ages were obtained from either of the two Type 2 hearths investigated. One was stratified within West Range Alluvium, however, suggesting that it probably dates to between

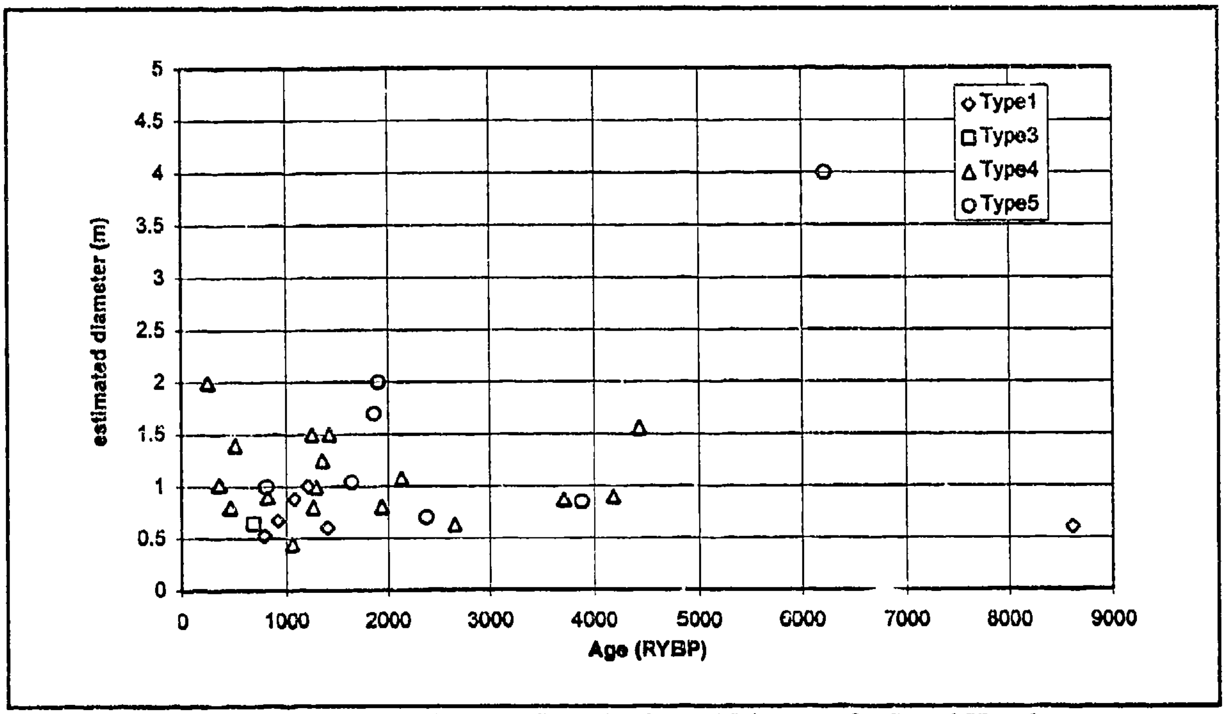


Figure 8.5 Radiocarbon Ages (corrected) vs. Estimated Diameter for Dated Hearths.

roughly 4500 and 800 BP. The other hearth exhibited thin carbonate coats on the clasts, suggesting that it probably dates to at least the Late Archaic.

Only one of the seven Type 3 hearths (14%) yielded a chronometric age. This age (690 ± 140 BP) is equivalent to the latter part of the Late Prehistoric I (Prewitt's [1981] Austin Phase). However, undated Type 3 hearths were found in alluvial fills equated with Nordt's (1992) West Range and Ford fills, suggesting that the features were probably also constructed during the Archaic period.

Type 4 hearths were the most common hearth type overall, and also yielded the highest number of dates (17; 55% of the total). Obtained ages ranged from approximately 4400 to 250 BP, suggesting that they were constructed from the Middle Archaic through the Historic periods. These hearths correspond to Weir's (1976) Type 2 hearths in terms of morphology and environmental setting.

Seven of the ten Type 5 hearths (70%) were dated. The ages ranged from approximately 800 to 6200 BP, with four clustered in the Late Archaic between approximately 1650 and 2300 BP. Hearth Type 5 is similar to Weir's Type 3 in that both are basin shaped, slab lined, potentially multi-layered, and in some cases, contained in midden deposits. Based on Weir's chronology, these hearths were common during the San Marcos (2800 to 1800 BP) and Twin Sisters (2000 to 700 BP) phases, and were present to historic times. This is consistent with the temporal data from Type 5 hearths investigated during this phase of work.

The single Type 6 hearth appears to date to the Late Archaic based on stratigraphic correlation with Nordt's (1992) alluvial sequence and one loosely associated radiocarbon assay. The morphology of the hearth implies that it represents disturbance of a different type (probably Type 1).

8.7 CONCLUSIONS

As the above summary demonstrates, while there are many different types of features associated with prehistoric archeological sites on Fort Hood, the majority are thermal features composed of burned rock, ash, and/or burned earth. The additional data presented here strengthens the previous distinction drawn between burned rock mounds and burned rock middens (Kleinbach et al. 1995). Other authors (eg. Skinner 1974; Peter 1982) have also alluded to significant differences among 'middens'. While we feel that even this distinction is simplistic--there are at least two distinct types of burned rock mounds, and probably several different types of burned rock middens--drawing a distinction between burned rock middens and burned rock mounds is an essential step in deciphering the significance of these enigmatic features.

Collectively, the character of the majority of burned rock mounds addressed in the current study is somewhat (although not convincingly) suggestive of a technology involving the preparation of vegetal resources. The frequent presence of centralized, internal features, pits, or bedrock depressions is suggestive of the earth oven interpretation, and the clast-supported character of the matrix suggests that many of the features were constructed through the placement of individual clasts, with the fine matrix infiltrating later, rather than dumping of volumes of mixed coarse and fine matrix. However, this does not always appear to have been the case, particularly in the Paluxy environment. The low artifact return from the mounds suggests a limited suite of activities are represented, or that the discard of refuse in the vicinity of the features was intentionally minimized. The almost total lack of bone suggests that faunal processing was at best of minor importance, although shellfish preparation appears to have been practiced somewhat more frequently. This fact is interesting, given the relative distance from most of the mounds to environments capable of supporting mussels. While the paucity of faunal remains may indicate that plant processing was the focus of most of these features, the suite of recovered floral remains is also quite sparse, and is composed entirely of uncarbonized remains that probably represent intrusives (see Table 8.7). Therefore, it is possible that bone and/or macrobotanical remains were originally present in many of the mounds, but did not survive due to inhospitable soil chemistry. While the soil is theoretically mildly to moderately alkaline, and should therefore be relatively conducive to preservation of bone, soil chemistry studies, including pH determinations and measures of total and available phosphate, would be highly illuminating avenue of investigation (see, Collins 1991).

In stark contrast to the mounds, middens frequently contain a rich and diverse suite of associated materials that suggest that they probably represent the remains of a variety of activities. The mixed clast- and matrix-support of the typical midden is consistent with dumping of material or systematic disturbance of the matrix, and the diverse artifact suite suggests that they may frequently represent generalized refuse piles, much as has been proposed by Sorrow (1969) and Hester (1970;1971). The toeslope position of many of the features may indicate that they represent dumps at the rear of occupation sites on the terraces (most of which are probably now buried), and suggests that they will not be fully understood until investigations are broadened to encompass these areas. However, the geography of some of the toeslope middens argues against this model in many cases. For example, the midden at 41CV137 does not open onto a large terrace (the entire valley is only 30 to 40 m wide), but extends better than 25 m up an 18° degree slope, which is hardly consistent with a refuse dump at the rear of a terrace occupation. Similar arguments can be made about other impressive middens, such as F 1 at 41BL821. Moreover, the presence of internal features in some of the middens implies that this model is insufficient to explain the full range of variation.

In other cases (most notably at 41CV117, where F 1 covers almost 3 ha of a then-extant late Holocene terrace developed on early-middle Holocene alluvium, and at 41CV48, where F 2 covers approximately 0.36 ha), the middens occupy far too much area to merely represent a localized dump for broken hearthstones and detritus generated by a temporary (albeit probably repeatedly occupied) camp, and probably represent long-term, focused processing of specific resources by relatively large groups of people. In addition, the middens associated with the Paluxy sites are of wholly different character, both in terms of landscape position and artifact content, suggesting that they represent a distinct phenomenon (Abbott 1995:823-837. Therefore, we argue that the most promising avenues of research are focused, detailed multidisciplinary studies (cf. Collins 1991) coupled with a sensitivity to broader issues of landscape setting, morphology, and artifact content that appear to separate what remain a poorly understood and hitherto aggregated suite of prehistoric features.

Apart from rockshelters, burned rock middens are the richest and most visible archeological manifestations on Fort Hood. As such, they are also one of the most vulnerable to vandals. Virtually all of the large middens we examined were potted to some degree, and some appear to have been effectively strip-mined by organized teams of collectors to recover all the arrowheads and other collectable artifacts that they contain. Damage by plowing is also occasionally apparent. Mounds and concentrations, in general, are not as severely impacted. Whether this is a function of their location or a recognition of their lower artifact content by vandals is unclear, although the latter is considered more likely. The features least vulnerable to vandals are interstratified in the deep alluvial valleys, where discovery is difficult and the effort required to loot the sites appears to far outstrip the return. However, even these features are vulnerable to large-scale earthmoving by the army and to cutbank erosion, and thus cannot be considered free from potential impact. In any case, the burned rock features on Fort Hood represent an immensely valuable and highly vulnerable archeological resource, and one that our experience suggests continues to be destroyed by looters at an alarming rate.

Although the relatively extensive character of this investigation was valuable in that it facilitated recognition of key differences between burned rock mounds and burned rock middens, this same characteristic served as an impediment to effective investigation of the features. One of the most difficult problems proved to be distinguishing between intact and disturbed portions of the large burned rock features. Both consist largely of structureless jumbles of rock and very black fine matrix, and intrusive pits are extremely difficult to identify in many cases. While cohesiveness of the matrix often can provide a clue, particularly within the context of any individual feature, the temptation to view all features with friable matrices as largely disturbed should be avoided, as it is almost certainly wrong. The same characteristics that make disturbance difficult to identify contribute to the difficulty in distinguishing prehistoric strata and internal structure within the features, which is a problem that has been noted several times before (e.g., Peter 1982; Howard 1991). This problem is compounded by the limited excavations employed here to determine NRHP eligibility; it is difficult to discern broader structure with expediently cleaned backhoe trenches and isolated test pits, and subsequent excavations designed primarily to shed light on form, function, and context should employ methods better suited to that goal (see, Howard 1991).

While the basic function of the hearths is less obscure than the functions of the larger features are, there are few clear patterns apparent in their spatial and temporal distribution on Fort Hood. What does seem clear is that the variation in observed hearth types is neither the result of a technological arc in which one type succeeds another, nor of a spatial pattern where specific hearth types are necessarily associated with specific environments. While there is clearly variation in the effort expended to construct the various types of hearths, implying that the level of effort expended in construction was attuned to the functionality or anticipated longevity of the feature, the details of the cultural decisions responsible for the various types of hearths must also await more detailed investigation focusing on hypothesis testing rather than NRHP eligibility determination.

9.0 LANDSNAIL INVESTIGATIONS

James T. Abbott, Glenn A. Goodfriend, and G. Lain Ellis

One of the research topics we addressed in our previous reports (Trierweiler 1994; Abbott and Trierweiler 1995) concerns the utility of amino acid epimerization of land snails of the genus *Rabdotus* to questions of site chronology and site integrity. This chapter updates those studies with new data obtained from the sites reported in this volume and presents a synopsis of the problems and prospects of the method.

9.1 PHYSICAL BASIS OF THE METHOD

Amino acid epimerization analysis involves the measurement of the ratio of the amino acid epimers D-alloisoleucine and L-isoleucine, referred to hereafter as the A/I ratio, in the organic matrix of a calcareous biotic structure, and has been applied to bivalve shell, gastropod shell, and bone. In modern shell, essentially all of these amino acids are in the L-form, but over time they chemically convert to the D-form. This process is properly termed epimerization, but the term racemization, which technically refers to a similar reaction occurring in amino acids such as aspartic acid that have only a single chiral carbon atom, is often used synonymously (Bradley 1985:101). The rate of conversion from L-isolevcive to D- allisolevcine varies with temperature, but is consistent enough that the A/I ratio can be used as a proxy measure of relative age, and can provide an approximation of absolute age when tied to a independently-derived chronometric scale (Goodfriend 1987; 1991; Ellis and Goodfriend 1994; Ellis et al. in press).

Although some moisture must be present for epimerization to occur, the most important variable involved is heat, which governs the rate of conversion. The impact of heating appears to be most intense in extreme conditions (e.g., heating to more than several hundred degrees celsius), as in a fire. Intermediate heating over short periods has relatively little effect, as evidenced by minimal changes in the epimerization ratio. For example, racemization induced by hydrolosis at 100°C for 20 hours is only about 0.01. However, slightly elevated temperatures over considerably longer spans of time, such as occur when a shell is exposed to sunlight for a number of years, may indeed influence the rate of the reaction. Thus, a snail which is exposed to sunlight for several years prior to burial is likely to have an A/I ratio that is greater than a snail of equivalent age that was rapidly buried. Conversely, snails subjected to substantially elevated temperatures (e.g., in a fire) for short periods of time appear to rapidly epimerize during heating, resulting in ratios that resemble substantially older specimens.

Although depth of burial should also theoretically have an effect on the rate of epimerization because temperature extremes are mitigated by deep burial, such a relationship has not yet been conclusively demonstrated (Goodfriend 1992; Ellis et al. 1996). Other factors that may affect the relationship between A/I and age include differences in temperature resulting from the intensity and duration of sunlight, as a function of differences in slope, slope-aspect, and vegetative cover. One of the assumptions necessary for use of epimerization as an effective dating technique is that the rate of reaction is equal in the spatial realm within a given geographic area. Only if this is true can epimerization results be calibrated to independent radiocarbon ages to obtain a chronometric calibration curve. However, if prolonged exposure to sunlight truly does tend to accelerate the racemization rate by moderately elevating shell temperatures over relatively long spans of time, it follows that shells in areas that receive sunlight for most of the day (e.g., open, south facing slopes) should racemize more rapidly than shells in areas where sunlight is limited (e.g., narrow, north-facing valleys). Even after burial, the average temperature of the sediment or soil in the former setting is apt to be significantly higher than in the latter, suggesting that shells from different topographic/edaphic settings may not be strictly comparable, and would therefore require separate rate calibrations.

The presence of groundwater may also affect the rate and character of the epimerization process. At best, shells contained in sediment which is periodically saturated with groundwater will experience lower temperatures that should slow the rate of the reaction relative to other shells of similar age in unsaturated sediments. Moreover, there is a strong possibility that leaching and other chemical reactions occurring while the sediment is saturated may differentially remove certain amino acid or peptide tractions, resulting in changes in measured racemization ratios.

Replicative analysis by Goodfriend indicate that the reproducibility of A/I measures is less than ±5% of the measured ratio. This error is the only factor computed in the current analysis; while there are admittedly many additional potential sources of error, these latter errors are not quantified and are only used during the process of interpretation to explain deviations from expectations. Note that the principal effect of the percentage-based measurement error is a net loss of precision with increasing shell age. Thus, while relatively recent shells can be estimated with a high degree of precision because the A/I ratio is low, older shells have a considerably higher ratio that includes a wider potential error in terms of calendar years.

Because the rate of epimerization varies among different species, and depends on the history of climatic conditions, the Fort Hood epimerization research described here is focused on a single snail taxon, *Rabdotus moorc ιus*, that is very commonly found in the matrix of the sites. Despite the potential problems outlined above, promising results have been obtained from the snail epimerization program at Fort Hood (Ellis and Goodfriend 1994; Quigg and Ellis 1994; Abbott et al. 1995; Ellis et al. 1995a; in press). However, many interpretive problems have come to light, and the application and interpretation of the technique is far from straightforward. The following sections present a discussion of the results and implications of the epimerization program at Fort Hood to date.

9.2 CONSIDERATIONS OF AGE ESTIMATION BASED ON EPIMERIZATION RATIOS

One of the principal reasons for development of the snail shell epimerization method is to allow for an alternative method of age estimation to compliment radiocarbon dating (Ellis and Goodfriend 1994). This section provides a brief summary of the concepts behind the use of amino acid epimerization for age estimation, and an assessment of application of the method on Fort Hood. More complete theoretical summaries are presented in Abbott et al. (1995:801-814) and Ellis et al. (1996), and the reader is referred to those sources for additional information.

9.2.1 Calibration of the A/I Ratio

Estimation of the approximate age of snails, and hence the deposits that contain them, requires calibration of the A/I ratio to an independent chronometric scale. The best method for calibration to Holocene time scales is radiocarbon dating. Although radiocarbon ages from closely associated charcoal samples could have been used in calibrating the racemization rate, all ages used to calibrate the Fort Hood data were based on analysis of the shell itself; 14C ages of associated materials were used only to evaluate the validity of the curve, to avoid introducing spurious associates into the calibration.

As our investigations on Fort Hood progressed and the quantity of available data increased, a series of three different calibrations curves was constructed for the Fort Hood area. The initial curve was constructed from ten specimens collected from a single burned rock mound on 41BL598, and was used in Ellis and Goodfriend (1994). In order to supplement the calibration curve, eight additional snails were AMS dated during the preceding testing phase (Abbott, Ellis and Goodfriend 1995). Two of these specimens were pre-bomb shells obtained from collections at the Smithsonian institution, and were collected live in Central Texas during the early twentieth century. No A/I measurements were run on these shells, but the ratio was estimated at 0.012, as measured in recently live-collected samples by Goodfriend. The remaining six specimens were from sites addressed during Phase 1 testing, and were selected from suites of shells exhibiting clustered A/I ratios.

Different subsets of these data were used to construct the age calibrations used in our previous testing report (Abbott, Ellis, and Goodfriend 1995) and in Ellis et al. (1996). In the subset used in Abbott, Ellis, and Goodfriend (1995), one outlier was excluded on the basis of probable low-level heating (CB-133), another was eliminated due to a probable extreme radiocarbon age anomaly (CB-547), and neither of the two modern dated snails were used. The resulting regression equation exhibited a relatively high coefficient of determination (r^2 = 0.916). This equation is described by the formula:

Age (corrected radiocarbon equivalent) = 46,669 (A/I) - 473 (1)

A different subset of the data set was used to derive a regression equation for age estimation by Ellis et al. (1996). This analysis argued that the scatter of shells in the older part of the curve indicates that the long-term trend in epimerization rates is not linear, and limited the regression to the two modern specimens and the eight specimens less than 5,000 years old. It used calibrated 14C ages corrected for an AC age anomaly estimated at 440 years. This regression equation, which describes an apparently linear trend with a high degree of correlation between age and A/I value (r^2 = 0.98) and is only applicable to specimens less than 5,000 years old, is described by the formula:

Age (calendar equivalent) = 36,210 (A/I) - 385 (2)

This equation assumes a mean radiocarbon age anomaly of slightly over 400 years (arrived at iteratively; see Ellis et al. 1996) and yields an age estimate equivalent to a calibrated (calendar BP) radiocarbon age. Both of these calibration equations, which employed different assumptions and therefore yield significantly different results, are used throughout the individual site discussions. However, the following discussion focuses on Equation 2, which appears to be more accurate overall.

If the slope of a regression line fit to the calibration data is assumed to represent the mean rate of epimerization through the Holocene, some variability can be expected because the rate should change with climate-driven shifts in ambient temperature (i.e., the relationship should not be truly linear). However, several other factors may also influence the relationship between the age and epimerization ratio of a shell. If a shell exhibits an anomolously low radiocarbon age in comparison to the expected value derived from the regression equation, the most likely explanation is that the epimerization rate was accelerated by low-level heating, either artificially (e.g., in a fire) or as a result of unusually prolonged exposure to sunlight. If, instead, the point indicates an anomalously high radiocarbon age, three different explanations are possible: (1) the shell has been subjected to a prolonged exposure to lower temperature conditions that slowed the rate of epimerization, (2) the shell has been selectively leached of amino acids by groundwater, or (3) the radiocarbon age on the shell is in error due to the presence of a higher than expected "radiocarbon age anomaly." Because Fort Hood lies in a limestone terrain, there is abundant "dead" carbonate available in the system. Goodfriend and Stipp (1983) have demonstrated that snails from limestone areas tend to ingest a certain amount of "dead" carbonate and incorporate it into their shells, resulting in an "age anomaly" of up to approximately 3,000 years. Thus, radiocarbon ages on snail shells may be older than the true age of the shell.

In order to test for the presence of an age anomaly, two pre-bomb specimens of *Rabdotus* that had been collected live in Central Texas were obtained from the Smithsonian Institution by Goodfriend and dated by the AMS method. These two specimens yielded apparent ages of 640 ± 50 BP (calibrated 682 (643,590,571) 519 BP at Z sigma) (Beta-78130) and 690 ± 60 BP (calibrated 726 (655) 542 BP at Z sigma) (Beta-78131), respectively. These results clearly indicated that an "age anomaly" could exist. However, although the values obtained from the two specimens were fairly close, a sample of only two shells is insufficient to gauge the degree of variability in the "age anomaly," which is likely to be strongly affected by the microenvironment that a given snail inhabits.

To test the two equations (and obtain additional ages relevant to the sites in question), a suite of six additional snails was submitted for AMS radiocarbon dating during the analysis of Phase 2 testing data. These results suggest that the equation of Ellis et al. (in press) is a better estimator of age from A/I ratio in most cases. While the radiocarbon-equivalent ages predicted by the Ellis et al. (in press) equation were all within approximately 25% of the AMS assay, the Abbott et al. (1995) equation yielded age estimates approximately 110% to 170% of the radiocarbon age (Table 9.1). Nevertheless, both equations were used to calculate radiocarbon-equivalent ages for the specimens analyzed during analysis of the Phase 2 excavations to provide comparability with the previous report (Abbott and Trierweiler 1995), although only the more accurate equation (i.e., Equation 2) is used in this section. Figure 9.1 illustrates a scatterplot of the radiocarbon age vs. the A/I ratio of each of the 24 dated snails and the regression lines described by the two equations.

Several interesting trends are apparent in the suite of dated shells. One of the possibilities raised in the previous report (Abbott et al. 1995) was that the rate of epimerization on Fort Hood might be affected by topographic location and sunlight incidence; that is, that shells exposed on open uplands and south-facing slopes might epimerize at a faster rate than shells in north-facing valleys and slopes, where incident sunlight can be restricted to only a few hours a day and soil temperatures would be cooler. Examination of the landscape context of the dated assemblage (Figure 9.2) suggests that this factor probably has a profound influence, because the few shells from sites with north-facing exposure exhibit considerably lower A/I ratios than other shells in the same age range from other contexts. This relationship is illustrated particularly well in Figure 9.3, which demonstrates that the radiocarbon age of the majority of shells varies from approximately 0.8 to 1.7 times the age predicted (using equation 2), whereas the radiocarbon age of shells from the north-facing sites varied between approximately 2.4 and 3 times that of the predicted ages. However, as Figure 9.3 illustrates, three of the four anomalous shells from north-facing sites were also recovered from much deeper levels than the remainder of the dated shells, suggesting that burial depth may also be a factor influencing the apparent lower rate of

Table 9.1 Comparison of Amino Acid Epimerization-based Age Estimates and AMS Radiocarbon Ages.

First Assay Number	Second Assay Number	Radiocarbon Age (corrected)	Age Estimate[1]	Percent Difference	Radiocarbon Age (calibrated BP)	Age Estimate[2]	Percent Difference
CD-291	CD-381	4620	6994	151%	5310	5409	102%
CD-298	CD-382	5080	8581	169%	5816	6640	114%
CD-299	CD-383	5160	5874	114%	5947	4540	76%
CD-315	CD-384	2960	4287	145%	3112	3309	106%
CD-328	CD-385	3890	5874	151%	4269	4540	106%
CD-332	CD-386	3290	3680	112%	3524	2838	81%

[1] (2 measurement average) per Method 1 (Abbott et al. 1995)
[2] (2 measurement average) per Method 2 (Ellis et al. 1996)

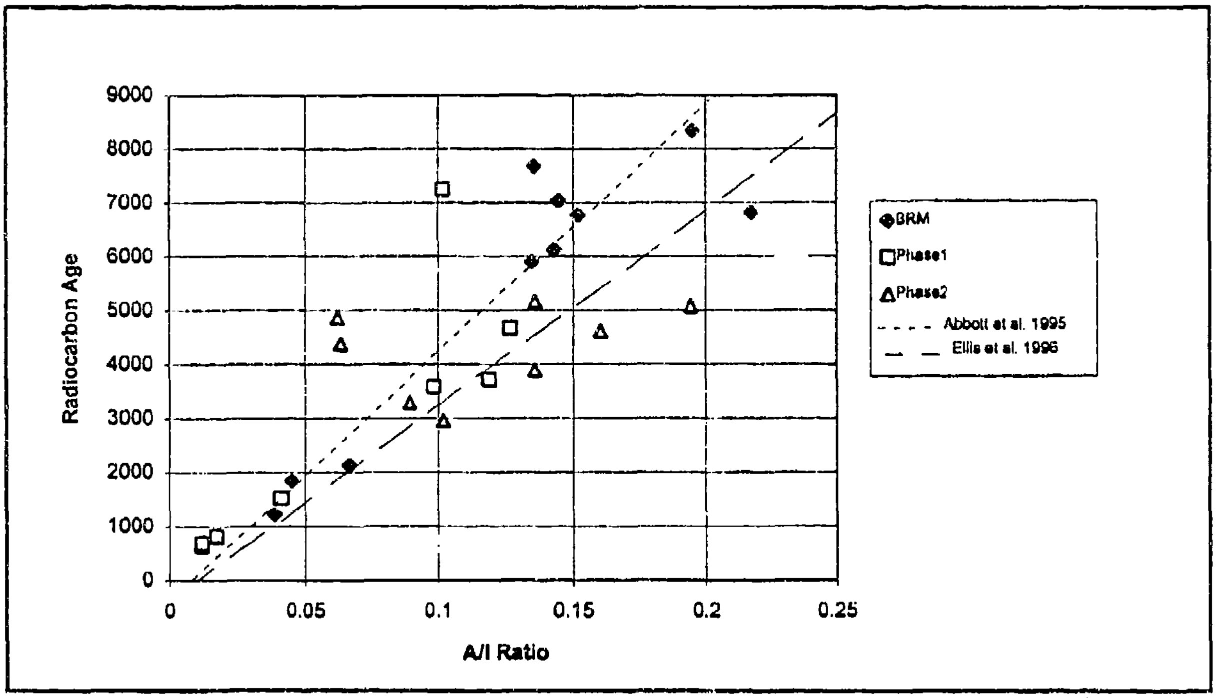


Figure 9.1 Relationship Between A/I Ratio and AMS Radiocarbon Age (corrected) of Shells Dated During the Three Phases of Work.

epimerization in these shells. Although the fourth north slope shell exhibits a significant deviation, more data are necessary to fully evaluate the relative impact of burial depth and slope impact on the rate of epimerization. However, it is worth noting that no depth effect is apparent in the shallowly buried shells, suggesting that any deep burial effect may actually be due to groundwater influences.

Figure 9.2-B also illustrates another interesting aspect of the radiocarbon data from the dated snails. As suggested previously, another possibility to explain anomalously old radiocarbon ages is that some snails were ingesting greater amounts of bedrock than others, thus adding "dead" carbon to the shell structure that would skew the ages. If this were the case, one could expect the limestone component to be reflected in the $\delta^{13}C$ composition of the shell. As the figure illustrates, $\delta^{13}C$ values from the dated snails vary by more than 4‰, which indicates that the diet of the snails is not uniform. However, although the rate of limestone ingestion could be expected to be considerably higher in snails inhabiting limestone terrain than in snails recovered from sites underlain by the Paluxy Sandstone, there is little apparent difference between the $\delta^{13}C$ values of these two populations. A higher proportion of limestone derived carbon in the shell carbonate should cause more enriched $\delta^{13}C$ values (Goodfriend and Hood 1983). Therefore, the existing data provide no compelling evidence that radiocarbon ages are strongly affected by differential limestone intake by individual snails.

9.1.2 Assessment of the Method

A total of 228 snail shells from 29 different prehistoric proveniences were assayed during analysis of our first set of sites (Figure 9.4) and an additional 151 snails from 22 different prehistoric proveniences were assayed following testing of our second set of sites, reported herein (Figure 9.5). In addition, six snails selected for radiocarbon dating were assayed twice, and four other shells

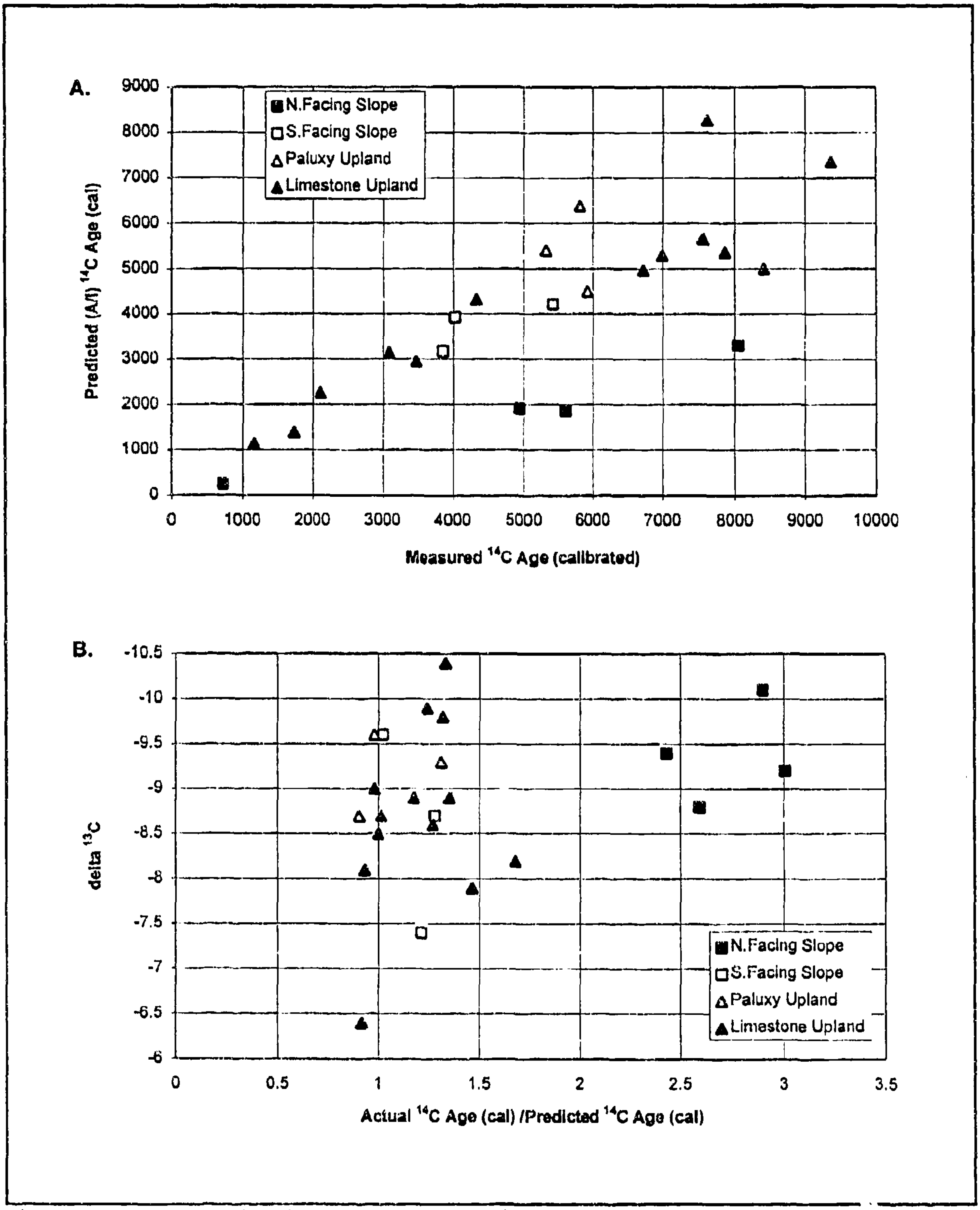


Figure 9.2 Scatterplot Illustrating (A) the Relationship Between AMS Radiocarbon Age and Ages Predicted by Epimerization Analysis; (B) the Relationship Between $\delta^{13}C$ and a Ratio of Actual vs. Predicted Age.

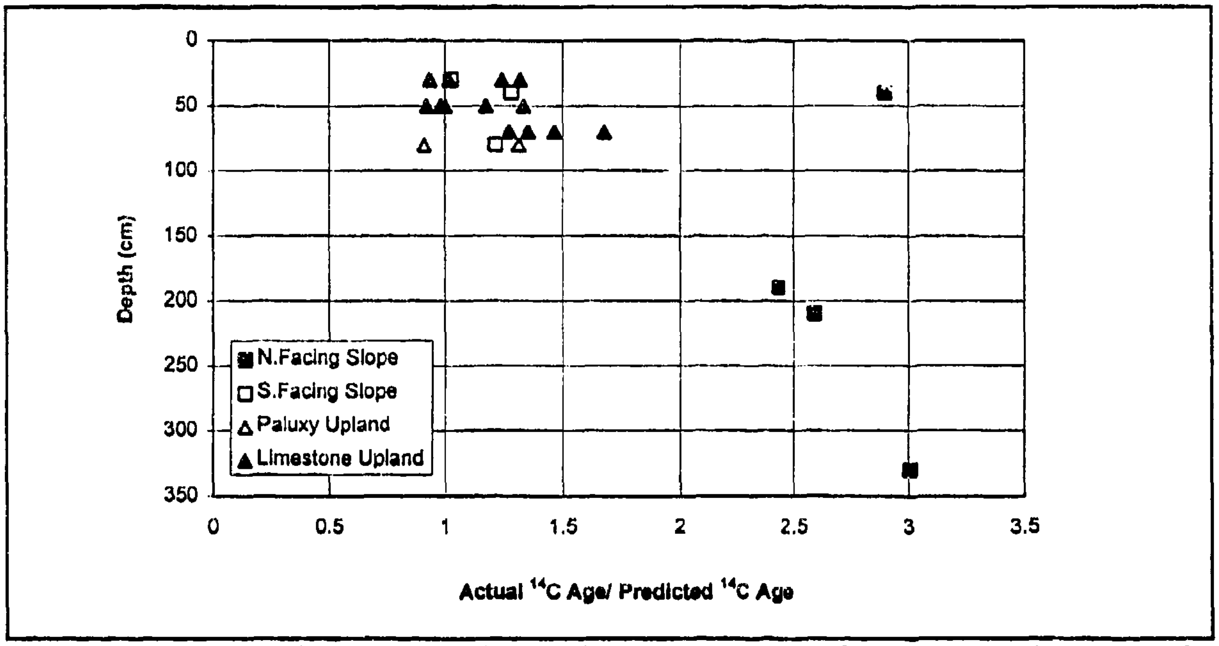


Figure 9.3 Scatterplot Illustrating the Relationship Between Depth Below Ground Surface and a Ratio of Actual vs. Predicted Age for Sites in Different Landscape Contexts.

were each assayed three times to test the reproducibility of measurements and the possibility that some of the variation apparent in the A/I values from individual proveniences might be the result of differential, low-level heating. The measured epimerization ratios from both analytical phases ranged from a low of 0.014 to a high of 1.13, which regress to apparent ages between approximately 120 and 40,000 BP using equation 2. Note that equation 2 is calibrated to provide age estimates for samples 5,000 years old or younger. Although the pre-Holocene epimerization rate is not known, it was clearly slower than indicated by the equation because the climate was markedly cooler. Therefore, while the following paragraphs describe apparent ages dating back well into the Pleistocene derived from application of the formula, these figures are included for comparative purposes only, and are not intended to imply that these figures represent the true age of the shells; rather, most are believed to represent samples artificially racemized by heating.

As in Phase 1 (Abbott et al. 1995), the results from the individual Phase 2 testing proveniences typically showed a moderate to relatively extreme spread of values (see Appendix C). As a result, interpretation of the data to yield an estimate of age required a process of accepting or rejecting individual assays from a given provenience, then averaging the accepted values. The obtained values from each individual provenience were ranked in order of increasing value, and clusters of similar shells were identified visually. Typically, the cluster with the lowest values was assumed to represent the age of deposition, but this was tempered by geomorphic considerations and other contextual data (Abbott et al. 1994).

Overall, the results obtained with the snail "dating" program agree moderately well with both chronometric ages obtained on associated charcoal and qualitative estimates of age based on stratigraphic context. While it may appear extremely equivocal to publish two different age estimates from the same data, it must be remembered that we are not arguing that

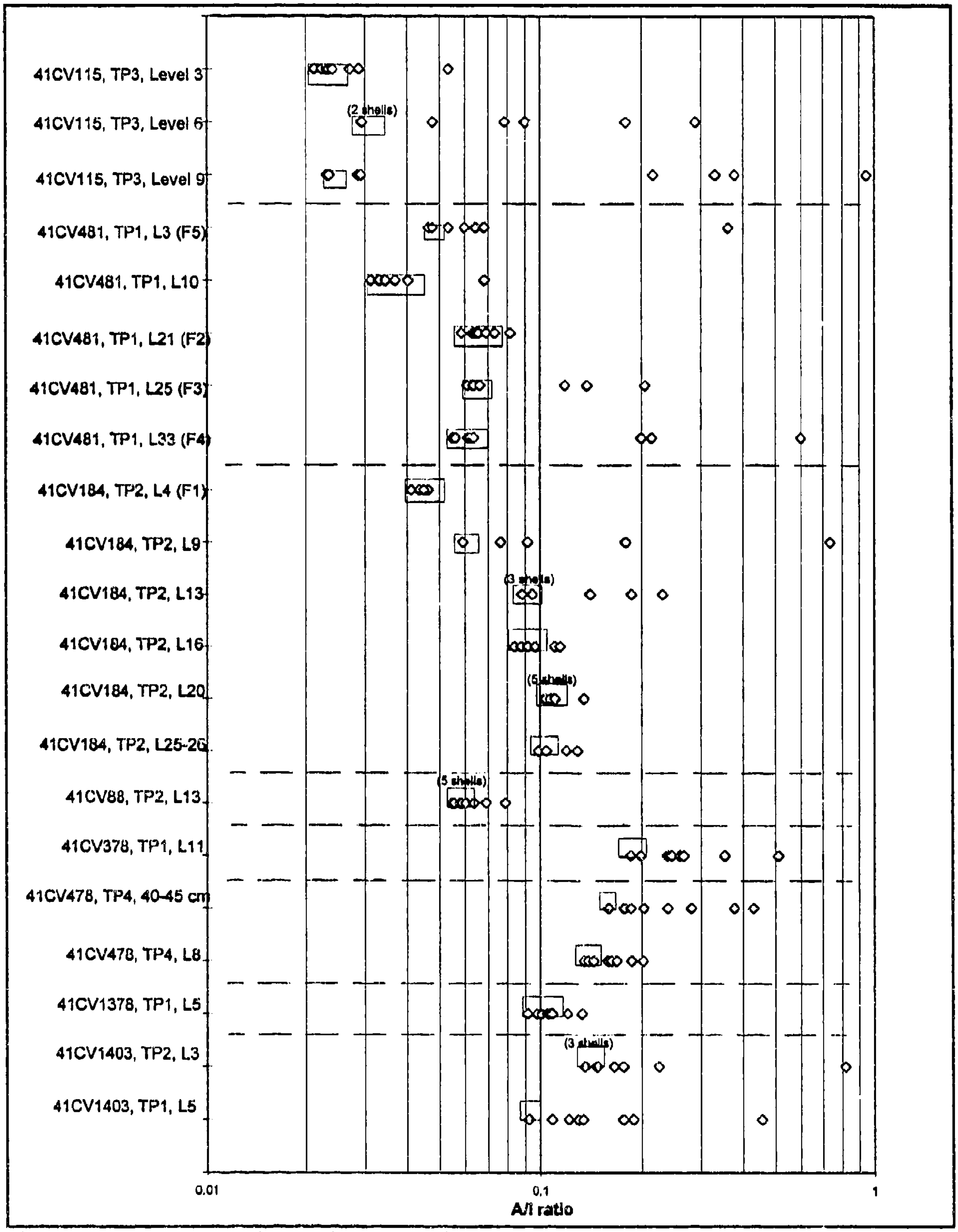


Figure 9.4 Plot of Epimerization Results from Each Context Investigated During Phase 1.

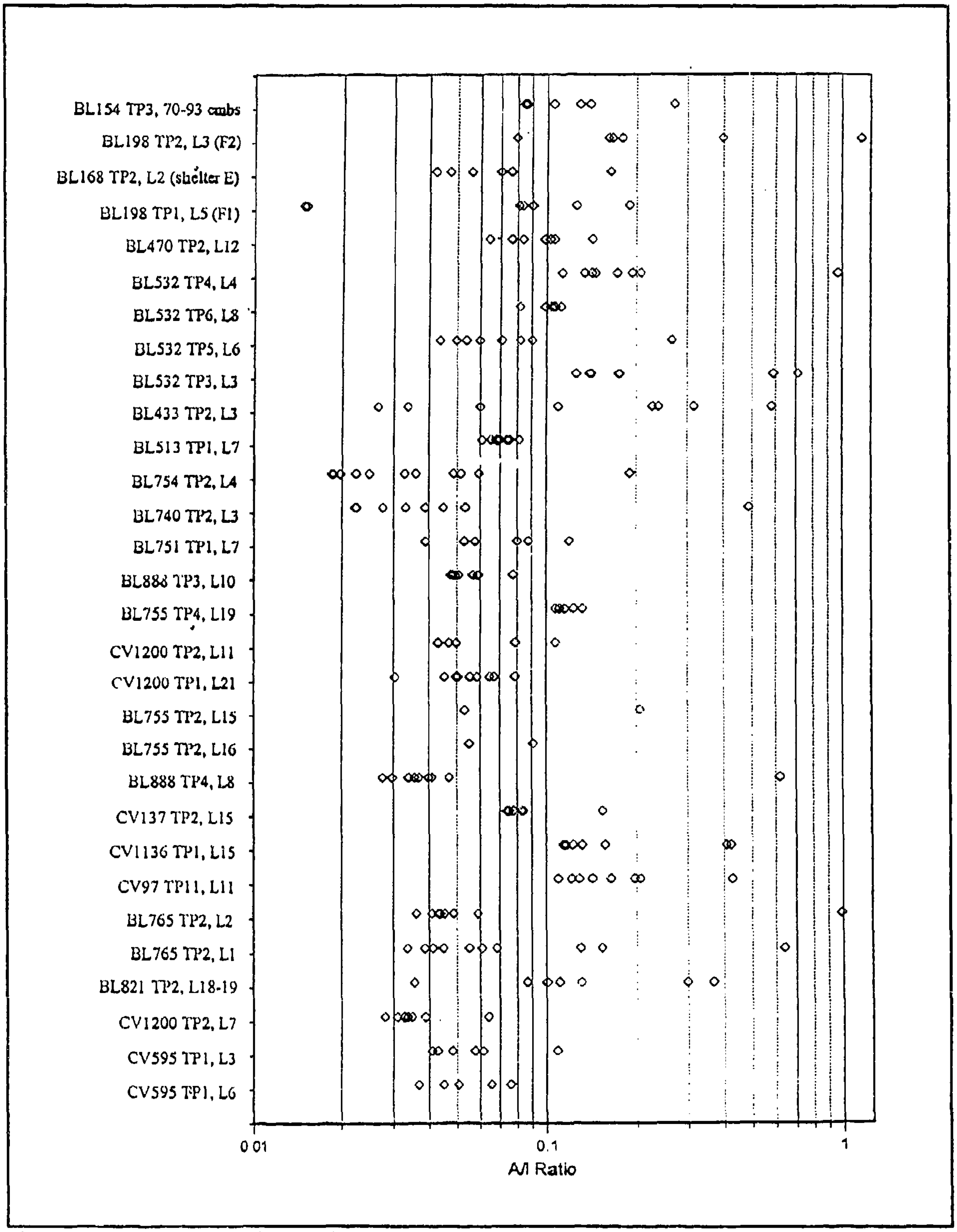


Figure 9.5 Plot of Epimerization Results from Each Context Investigated During Phase 2.

epimerization "dates" should carry the same weight as radiocarbon ages. Nevertheless, the method does appear to yield age estimates that are valuable interpretive tools. However, there are still a number of caveats that must be emphasized. First, there appear to be a continuum of epimerization rates operating on Fort Hood depending on the landscape context of the site. Burial depth and groundwater influences may also have strong impacts on the rate of epimerization. Second, while the linear regression provides a good first approximation of age (at least of the specimens from upland, open lowland, and south-facing slope contexts), the rate of racemization almost certainly varied through the Holocene as a function of climatic fluctuations, and precision could therefore be improved by adding enough additional data points to the calibration curve to confidently establish a polynomial regression. Finally, the results clearly indicate that a relatively large sample is required from each provenience to minimize errors resulting from heating and stratigraphic reworking of individual specimens.

9.3 CONSIDERATIONS OF INTEGRITY ASSESSMENTS BASED ON EPIMERIZATION RATIOS

Another type of information potentially obtainable from A/I data involves inferences on the integrity of an archeological assemblage based on the apparent integrity of an associated snail assemblage. Because snails are subject to the same suite of post-depositional processes that affect artifacts of the same general size and weight (and assuming that a snail shell reworked from its original context will be filled with sediment), a lack of integrity in a snail assemblage is apt to reflect a lack of integrity in an associated artifact assemblage. The potential of the assemblage from isolated levels as an indicator of archeological integrity has been explored previously (Ellis and Goodfriend 1994; Ellis et al. 1994; Abbott et al. 1995; Ellis et al. 1996), and can provide a powerful tool for interpretation. However, a serious impediment to this type of analysis is imposed by the similarity of anomalous assemblages resulting from reworking and subsequent redeposition of old shells and anomalous assemblages resulting from differential heating of shells, particularly if the heating is relatively mild and results in only a moderate increase in the A/I ratio (Ellis et al. 1994; Abbott et al. 1995; Ellis et al. 1996).

One of the most striking results of epimerization analyses conducted during our two phases of site testing at Fort Hood is the wide spread of A/I ratios typical of investigated proveniences. Of the 47 individual proveniences analyzed, only 15 exhibit a range of A/I values that is smaller than the mean, while 19 exhibit ranges that are at least twice the mean value. All but three of the proveniences exhibit a positive skew, indicating that there is a strong tendency for clustering at the lower end of the measured range, while values on the higher end are typically widely scattered. This implies that either: (1) the investigated proveniences are almost all strongly disturbed, with substantial input of significantly older material; (2) the majority of investigated proveniences contain some shells that have been heated, artificially accelerating the A/I reaction; or (3) some proveniences contain a high proportion of reworked shells, while others contain a high proportion of heated shells. This issue remains the most serious impediment to interpretation of assemblage integrity using racemization.

One of the principal advantages of using *Rabdotus* as an archeological dating method in Central Texas is the apparent affinity of the species for cultural detritus; in fact, the association between archeological sites and *Rabdotus* species is so common that some authors have suggested that the snails actually represent an intentionally gathered food source (Allen and Cheatum 1961; Hester 1971). If this hypothesis is true, it follows that almost all of observed deviation should be a function of heating because only living shells would have been gathered. If, instead, the snails represent primarily scavengers attracted to cultural detritus, it follows that most heating anomalies would imply either relatively long-term occupation (e.g., weeks or months) or reoccupation of previous localities, because snails would be unlikely to move in quickly enough to a short-term camp to be heated in large numbers. In either case, the noticeably higher density of snails in archeological sites than in the surrounding environment, coupled with the nearly ubiquitous presence of anomalously high A/I ratios in the investigated proveniences, led us to suggest (Abbott et al.1995) that many specimens were probably heated rather than redeposited by chance from older contexts. However, this conclusion remained hypothetical, and further work was recommended to address the problem. In contrast, Ellis et al. (1996) emphasized the questionable integrity of the Fort Hood site assemblage suggested by the data spread typical of individual contexts, but did acknowledge that the influence of fire was a variable that required further work.

Although the similar patterns produced by low-level heating and reworking complicates integrity assessment of individual levels, much of this ambiguity can theoretically be alleviated by assessing snails from a succession of stacked levels (Ellis et al. 1994; Abbott et al. 1995; Ellis et al. 1996). Figure 9.6 presents models of theoretical expectations for a suite of measured A/I values on snails collected from stacked levels in a variety of natural and culturally-influenced situations. Because every individual, relevant paleosurface within a stacked series of deposits represents some definite span of time (however short), snails that were resident on that surface should also represent a range of time. If a stacked series of sloping paleosurfaces are sampled with flat levels, a higher spread of A/I values should be obtained, reflecting the inclusion of the cross-cutting levels. On the other hand, if the sampling surface coincides with the paleosurface, the range of A/I values should deviate around the "true" age, with anomalies reflecting stratigraphic reworking, heating, depth, and groundwater effects, and analytical error.

If we disregard the effects of heating and reworking, then a surface which is exposed for a longer period of time should show a greater range of measured A/I ratios from snails associated with that surface. Thus, snails obtained from a stacked series of levels in sediments that resulted from a relatively constant sedimentation rate should exhibit roughly the same spread of values (as quantified by standard deviation), while the average (mean) value should increase fairly consistently with depth (Figure 9.6-A). If the deposits represent an increasing rate of sedimentation, both the mean and the standard deviation of A/I values should increase with depth (Figure 9.6-B). If instead the deposits represent a decreasing rate of sedimentation, the mean should increase very slowly with depth, while the standard deviation should decrease markedly (Figure 9.6-C).

Deviations from these patterns will result from heating by fire, from turbation of existing deposits, and from substantial incorporation of older shells. As through erosion and redeposition Figure 9.6-D illustrates, construction of a fire on a paleosurface should result in widely disparate A/I values in the levels affected, and should exhibit a range of individual values far greater than the levels below. However, unless the level represents a large, heavily-utilized feature, there is still a good chance that some shells will be unaltered by heat and thus provide a good estimate of age. Even if this is not the case, values obtained from the unaltered levels above and below should still provide limiting ages on the deposition of the sediment of interest.

Disturbance of the upper levels (e.g., by vandals or plowing) should be characterized by levels exhibiting roughly equivalent means and standard deviations that represent an average of the affected levels (Figure 9.6-E). If the observed spread is due only to disturbance, the mean of the disturbed levels should be no greater than the undisturbed levels below. Examples where the maximum values in the upper zone exceed the underlying context would indicate incorporation of old shells and/or heating.

If old shells are being redeposited in appreciable numbers, the assemblage should resemble the distribution in Figure 9.6-F. In this case, standard

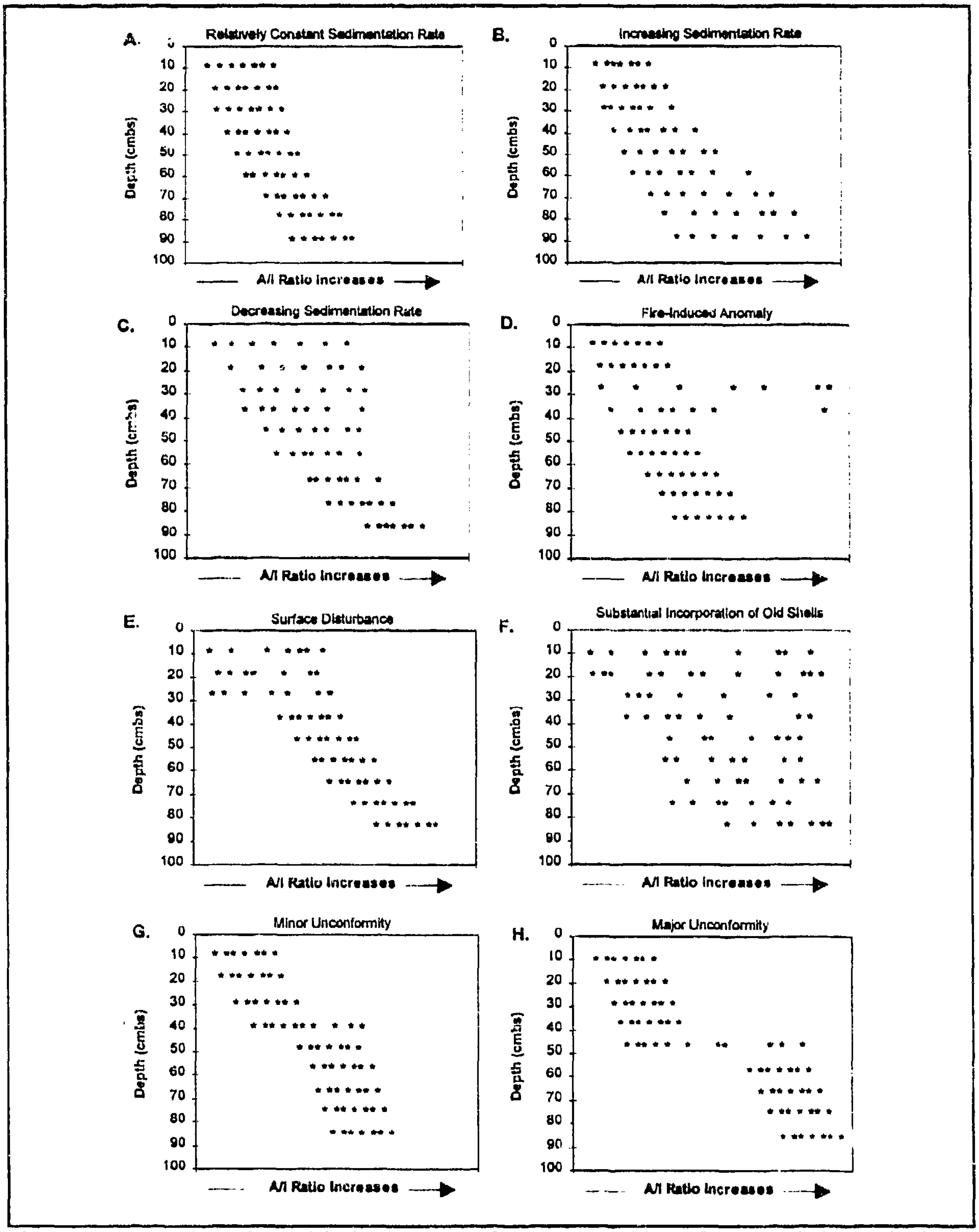


Figure 9.6 Schematic Model of Expectations for Intra-assemblage Variability in Epimerization in a Variety of Depositional and Cultural Contexts.

deviation of the A/I values is irrelevant, because the assemblage would be expected to contain a mix of contemporary and fossil shells (relative to the time of deposition); however, the minimum A/I value obtained should tend to increase with depth. Note that a similar pattern could be expected in context where a succession of fires was built as the sediment accumulated. For instance, in a rockshelter, where the physical constraints on the placement of a fire coupled with the attraction of such a locality to people typically far outweigh the potential for redeposition of substantially older shells, such a pattern is at least as likely to result from a succession of heating episodes as from reworking of older deposits.

Finally, unconformities in the sediment column should also be apparent. Short-term unconformities (Figure 9.6-G) should exhibit a relatively minor, but noticeable shift towards higher A/I values beneath the unconformity, while major unconformities (Figure 9.6-H) should evince an extreme shift commensurate with the length of the depositional hiatus. Note that in both cases, admixture of snails from the two sediment packets at the unconformity is apt to create a level with an anomalously large spread of values at the contact.

Several different lines of evidence were pursued during Phase 2 testing to address the equifinality issue. First, four different sequences were analyzed to provide epimerization suites from stacked stratigraphic contexts. In addition to the following synthesis, these stacked sequences (41CV115, TP 3; 41CV481, TP 1; 41CV184, TP 2; and 41CV478, TP 4) are presented individually in the relevant site discussions in Chapter 5.0. Second, a series of four shells (41CV115, TP 3) were selected for multiple analyses to determine if variability in racemization resulting from differential heating of various parts of presumably heated shells could be demonstrated. Finally, two examples of paired shells that were from the same proveniences, but that exhibited differing epimerization values, were radiocarbon dated to determine if they were actually of different ages. Note that all age estimates in the following discussion use equation 2, even though it is not valid for shells over approximately 5,000 years old because of climatically drawn changes in the rate of epimerization.

The stacked series from 41CV115, TP 3 represents samples collected from a north-facing rockshelter that contained abundant cultural material throughout the profile. Rabdotus suites from levels 3, 6, and 9 were analyzed (see Figure 9.5). The assemblage of eight shells from level 3 yielded A/I values ranging from 0.0212 to 0.0533, with five shells clustering between 0.0212 and 0.024. Examination of the value spread suggests that the assemblage probably represents a relatively unaltered suite, including seven shells ranging from approximately 400 to 650 years old and one shell that is apparently three times this age. These age estimates use the equation of Ellis et al. (in press); because the shelter has a north exposure, these estimates are likely to be up to 50% too young. This conclusion is supported by a radiocarbon age of 820 ± 40 BP on charcoal from F 1 (40-45 cmbs). The single anomalously high AD value may represent reworking or heating, but the overall assemblage is fairly tight and implies that the associated archeological strata are probably in relatively good context.

In contrast, the assemblage from level 6 exhibited an extreme spread of epimerization values consistent with expectations for a heated assemblage. The estimated ages of these eight shells ranged from approximately 675 BP to more than 10,000 BP. However, the two "youngest" shells yielded almost identical epimerization ratios that equate to ages of approximately 675 BP, and are tentatively interpreted as representative of the age of deposition. The fact that these shells were recovered from the level below the feature dated to 820 BP suggests that the ambient rate of racemization was probably slightly slower than implied by either of the two calibration equations.

Another example of a probable heated assemblage was recovered from level 9. The ratios from these shells range from 0.0231 to 0.947, which equate to "ages" from approximately 450 to >10,000 BP. Once again, a cluster of two shells with similar ratios at the low end of the spread are assumed to represent the ambient rate of racemization, and suggest a radiocarbon-equivalent age of approximately 460 BP using equation 1. Not only is this estimate clearly too low based on a radiocarbon age on charcoal of 1240 ± 40 from a level higher, but it is also significantly lower than the age suggested by shells from level 6. This implies that the rate of epimerization was even slower in this level than it was in level 6. This slow rate is probably attributable to cooler temperatures resulting from groundwater discharge in the shelter.

The rockshelter setting of the stacked series in 41CV115 limits the possibility for the introduction of substantially older snails, making it a fairly certain conclusion that the wide spread of values from levels 6 and 9 represent heating. However, the same is not true of the open air sites, which also show some interesting trends. At 41CV481, TP 1, a sequence of five stacked shell assemblages were analyzed from a series of burned rock features interbedded in a thick colluvial sequence (see Figure 9.5). This sequence exhibits two noteworthy traits: (1) evidence that the uppermost suite of snail shells, and the burned rock feature that they were associated with, is colluvially reworked, and (2) clear evidence of a decrease in the rate of epimerization with depth, ultimately resulting in a rate that is considerably slower than indicated by either of the two regression equations. The five levels addressed at this site consist of three stratified burned rock middens (levels 3, F 5; level 21, F 2; and level 33, F 4) separated by thick deposits of colluvium (levels 10 and 25), the lower of which also contained a small concentration composed of three large burned limestone slabs (F 3). During initial recording of the backhoe trench profile, the upper midden was not recognized, although dispersed burned rock and artifacts were noted. However, it was designated as F 5 on the basis of recovery from TP 1. Interestingly, comparison of the epimerization suites from the feature (level 3) and the underlying colluvium (level 10) indicated a stratigraphic reversal, with the lower of these two suites indicating an age almost 500 years younger than the shells from level 3. In fact, all but one of the shells from the colluvial suite in level 10 yielded epimerization ratios lower than or equal to the "youngest" shell in the suite from level 3. This strongly suggests that F 5 actually represents material reworked from the surficial midden upslope (F 1) rather than an in situ result of human activity.

The three suites from F 2, F 4, and the stratum containing F 3 all show fairly strong clustering at the low end of the spread, indicating that the obtained estimates are probably representative of the average long-term rate of epimerization at those depths. Significantly, these ratios exhibit clustering that suggests that the rate of epimerization decreases with depth. The shells with the lowest all values in F 2 (level 21) equate to an age of approximately 2025 BP, while the accepted shells from Fs 3 (level 25) and 4 (level 33) yield radiocarbon-equivalent ages of approximately 1920 BP and 1770 BP, respectively. Considered alone, this apparent stratigraphic reversal suggests that either (1) the sequence is inverted, or (2) the epimerization ratios are affected by a depth effect or groundwater. Fortunately, several radiocarbon ages are also available from the sequence (see Appendix F). These ages suggest that the features are in normal stratigraphic position and date to between approximately 4000 and 4900 BP. Thus, the features appear to not only be in normal stratigraphic context, but they are also at least twice as old as the epimerization ratios imply. In other words, the rate of epimerization appears to be strongly attenuated by depth. Although this depth effect could conceivably be only the result of mitigation of surficial temperature extremes, the lower deposits have clearly been repeatedly saturated, and the decrease in the rate of epimerization may be largely a result of groundwater cooling. Other factors that possibly influenced the slowed speed of the epimerization reaction include the north-facing slope context of the site and differential leaching of the amino acids in the shells.

Although the age estimates from the deeper strata at 41CV481 are clearly inaccurate, the spread of epimerization values is nonetheless informative. Notably, no snail shells indicating significant heating were recovered from the F 2 suite, suggesting that it may represent a dump for burned rock, ash, and associated cultural material generated elsewhere. In contrast, several probable heated shells are present in the assemblages associated with Fs 3 and 4, suggesting that they were fired in place. While these conclusions can only be considered testable hypotheses, they do provide a grounding for further investigation.

The third suite of stacked analyses reveals a similar trend of a decreasing rate of epimerization with depth. This sequence of six stacked levels from 41CV184 (see Figure 9.5) also shows evidence of probable heated strata interspersed with strata suggesting moderately rapid deposition and little reworking of older shells. Interestingly, the stratum from the densest zone of cultural material (level 4, in the upper part of the undisturbed portion of F 1, a burned rock midden) exhibited a remarkably tight clustering of A/I values, once again implying that the burning that fractured and discolored the rock probably did not occur in situ. These six shells imply a radiocarbon-equivalent age of approximately 1200 BP, which is broadly consistent with the age range of 1280 BP to 2160 BP implied by radiocarbon ages from F 1. In contrast to the tight cluster of all values in the uppermost assemblage, the assemblage from level 9, some 30 cm below the midden, exhibits an extreme spread of values that is difficult to reconcile with alluvial or colluvial reworking of old shells, and thus probably represents relatively intense heating. The five shells from this level yielded unclustered epimerization ratios ranging between approximately 0.06 and 0.74, equating to ages of approximately 1750 BP to >10,000 BP. This would seem to imply that intense burning was responsible for the spread of radiocarbon ages. However, level 9 contained only sparse cultural material, no evidence of burning was apparent, and the "youngest" snail equated to a radiocarbon-equivalent age 400 years younger than the oldest age from the overlying midden. For these reasons, interpretation of this stratum remains problematic.

Six shells from level 13, near the contact between the younger West Range fill and the older Fort Hood fill, yielded estimated ages ranging from approximately 2800 BP to 8900 BP. The three lowest ratios overlap at ±5%, and are interpreted as best representing the age of deposition, which regresses to a mean radiocarbon-equivalent age of 2960 BP using the equation of Ellis et al. (in press). Once again, heating is the preferred explanation for the "tail" of anomalous ratios, but is far from firmly established. The three suites from levels 16, 20, and 25-26 all exhibit much tighter clustering with no significant outliers, indicating that these levels and the material they contain are probably in good stratigraphic context. However, these strata represent the early/middle Holocene Fort Hood fill of Nordt (1992), which dates to no later than approximately 4500 BP, suggesting that the ages implied by the epimerization data (2875 BP, 3345 BP, and 3285 BP, respectively) are all several thousand years too young. This conclusion is supported by a radiocarbon age of 6230 ± 60 BP on charcoal from level 31. Therefore, like the stacked suite at 41CV481, the deeply buried shells appear to epimerize much more slowly than predicted by either equation, and actually exhibit a minor apparent stratigraphic reversal at depth. Once again, the relative extent that this phenomenon is attributable to mitigation of surficial temperature extremes, north-facing exposure, and groundwater influence is unclear; however, in contrast to 41CV481, there was little evidence of periodic saturation at depth in this profile.

The final series of stacked deposits consist of two suites of eight shells each from TP 4, level 5 (40-45 cmbs), and TP 4, level 8 on 41CV478 sequence (see Figure 9.5). These two assemblages represent snail shells recovered from a site developed in Paluxy Sands, and indicate a stratigraphic reversal.

The level 5 assemblage yielded epimerization ratios ranging from 0.16 to 0.429, which regress to radiocarbon-equivalent ages ranging from approximately 5400 BP to more than 10,000 BP. The level 8 assemblage, in contrast, yielded epimerization ratios between 0.135 and 0.202, equating to radiocarbon-equivalent ages ranging between approximately 4500 BP and 6900 BP. This spread is both tighter and "younger" than the level 5 assemblage, suggesting that all the epimerization ratios shells in the upper assemblage are too old to represent the age of deposition due to heating, colluvial reworking, or both. Either of these two possibilities is entirely feasible because the Paluxy substrate is particularly prone to slopewash and colluviation, and the snails were associated with a thermal feature. However, as discussed below, AMS ages from two of the level 8 shells suggest that heating is the most probable explanation.

Another tactic employed to investigate the relative influence of colluvial reworking and heating on the development of the typically wide spread of values in the discrete snail shell assemblages was AMS dating of shells from the same assemblage that exhibited differing A/I ratios. Two shells (CD-298 and CD-299) from 41CV478, TP 4, level 8 were selected and dated by the AMS method. Although the epimerization ratios obtained from these two shells (0.187 and 0.135) suggested that the two shells differed in age by approximately 1,900 years, the radiocarbon ages obtained were statistically identical (5080 ± 60 and 5160 ± 70, respectively). Thus, the spread in this assemblage appears to be the result of heating. Interestingly, the "younger" epimerization estimate is 600 years younger than the radiocarbon age, suggesting that the rate of epimerization was slightly retarded. In further support of the heating interpretation, one of the shells from level 5 (CD-291), which exhibited an epimerization ratio indicating an age of approximately 5,400 years, was dated at 4620 ± 50.

Although the shells from 41CV478 appear to be heated, the other investigated assemblage indicates that the spread clearly includes colluvial incorporation of old shells. This assemblage, which was associated with the base of burned rock mound (F 1) in 41CV1403, TP 1, level 5, exhibited a range of epimerization values that regress to radiocarbon-equivalent ages from approximately 2950 BP to more than 10,000 BP. Two shells were selected from this assemblage and AMS dated. The first (CD-332), which exhibited an epimerization ratio (0.0922) that regresses to an approximate age of 3073 BP, was radiocarbon dated at 3290 ± 50 BP, while the second shell (CD-328), which exhibited an epimerization ratio (0.13) that regresses to an approximate age of 4325 BP, was radiocarbon dated at 3890 ± 50 BP. Although the difference between the epimerization estimate and the AMS age of the second shell may indicate that this shell was also mildly heated, the 600 year difference between the two AMS ages clearly indicates that the assemblage also includes snail shells of several different ages and confirms the age estimates obtained by epimerization analysis.

Finally, because a shell exposed to high temperatures rapidly epimerizes to extreme ratios similar to shells of late Pleistocene age, the hypothesis was advanced that the many shells exhibiting only minor shifts in A/I were only mildly heated, such as would occur on the periphery of a large fire. If this is the case, it follows that some parts of an individual shell (i.e., the side facing towards the fire) could have been heated more intensely than other parts (i.e., the side facing away), and thus mildly heated shells might exhibit more extreme variability in A/I ratios from different parts of the shell than unheated specimens or more intensely heated specimens. To test this hypothesis, four shells from TP 3, level 6 at 41CV115 were selected for multiple epimerization assays. Site 41CV115 was selected because it is a rockshelter where the potential for colluvial reworking is low, and the variability among shells could be attributed to heating with a relatively high level of confidence. Two of the shells selected for multiple assays (CD-80 and CD-77) exhibited nearly identical initial A/I ratios at the low end of the spread, and were interpreted as unheated specimens. The third shell selected appeared to be mildly heated on the basis of the initial A/I ratio (CD-82), and the fourth shell appeared to be strongly heated (CD-76). Analyses of three samples each of four shells, (lip, middle, and apex of shell) were carried out. As Figure 9.7 illustrates, the greatest variability between measurements was obtained from the presumably mildly heated shell. In the case of the two presumably unheated shells, the largest obtained ratios were 9.5% and 12.9% higher than the lowest obtained ratios. The presumably strongly heated shell exhibited somewhat more variability, with the largest obtained ratio 17.6% higher than the lowest obtained ratio. However, the presumably mildly heated shell exhibited a variability of 32%, with the lower ratios only slightly higher than the presumably unheated specimens. This suggests that multiple assays may be an effective way of differentiating mildly heated shells from slightly older shells reworked from other contexts.

9.4 CONCLUSIONS

Although several issues require more clarification, our snail shell epimerization program at Fort Hood should be considered a resounding success. While interpretation of epimerization results is admittedly less than straightforward and thus requires more thoughtful interpretation than radiocarbon dating, the method results in age estimates that usually appear to be quite reliable, given allowance for a moderate level of error. Further work clarifying the influence of slope aspect and burial depth can only improve the accuracy of the method for dating. Although the potential of epimerization as an alternative dating method is clearly valuable, it can be argued that the potential for epimerization analysis to allow critical assessment of stratigraphic integrity is the single most important aspect of the benefit to archeology. Despite the fact that many ambiguities remain to be resolved, there is no other readily available or affordable technique that provides an equivalently robust basis for identifying and discussing specific reasons for trusting or doubting archaeological integrity. Integrity assessment is, after all, a mechanism for making determinations about the trustworthiness of artifact associations. As the case studies here demonstrate, highly clustered values can be used to make a strong argument for assemblage integrity, while a wide spread of values causes the investigator to identify and critically assess a

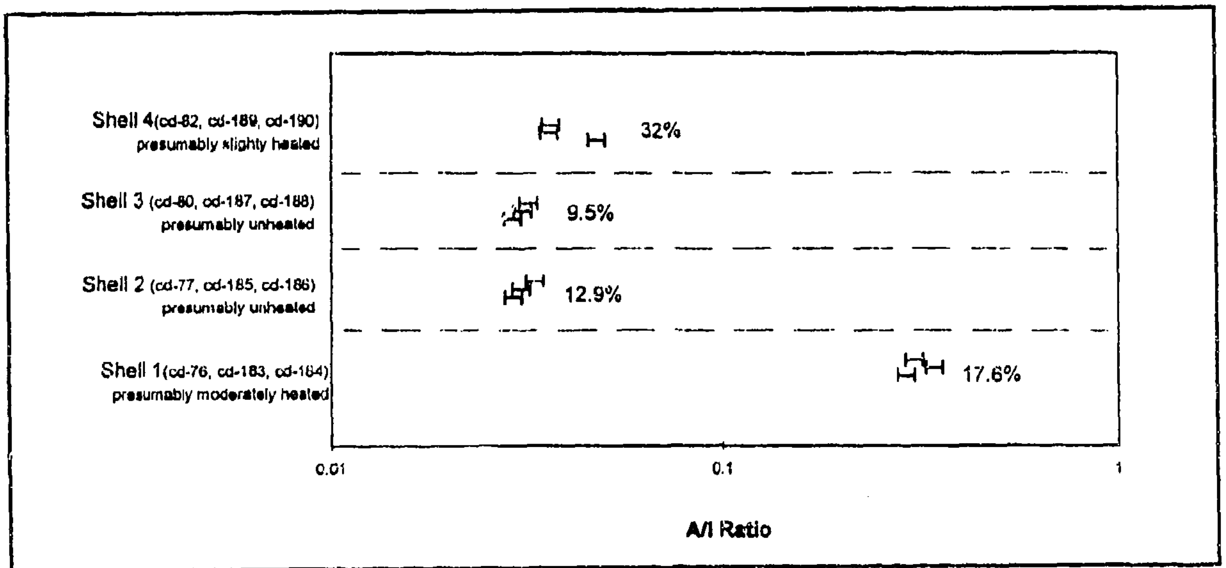


Figure 9.7 Values Obtained from Measurements of Different Parts of Individual Shells from 41CV115 (TP 3, Level 6) Presumably Unheated, Slightly Heated, and Moderately Heated Based on Initial Epimerization Results.

limited number of possible explanations for the spread. Often, additional analyses (e.g., multisampling of individual shells, examination of other amino acid pairs) may be employed to further reduce ambiguity. When compared with the costs of data recovery or site protection, racemization assays in crucial proveniences can be a quite cost effective mechanism for demonstrating integrity, or the lack thereof, thereby allowing more confident assessment of research potential. Chronometric estimates obtained from the values, while somewhat lacking in precision, provide an additional benefit obtained without additional cost. Another side benefit of the application of epimerization for integrity assessment is the potential for addressing paleoenvironmental questions (Abbott et al. 1995). We hope that this line of investigation is continued on Fort Hood so that the potential of the method can be fully realized.

10.0 SUMMARY OF ROCKSHELTER INVESTIGATIONS

James T. Abbott and J. Michael Quigg

Like the previous discussions of features and epimerization, this summary of the tested rockshelters at Fort is an update of our previous discussion (Abbott 1995:825-837) and incorporates the additional data we have collected from an additional 56 tested sites. However, our earlier discussion of paleoenvironmental potential (Hall and Abbott 1995) has been omitted here, because we have little new data to contribute. The interested reader is referred to the previous report for discussion of this aspect of the research potential of Fort Hood rockshelters.

During our testing of the 119 sites, we investigated 37 rockshelters at 26 sites (Table 10.1), using 77 test pits to assess their context and cultural content. These 26 rockshelter sites were concentrated along 11 drainages across a broad area of Fort Hood. Nine sites (32%) were clustered along Cowhouse Creek, the longest and largest creek with the second most frequent cluster (n=4) along Two Year Old Creek, a small tributary to Cowhouse Creek near the western boundary.

In general, the shelters at Fort Hood are quite small; the largest is 50 m wide by 10 m deep, and the average of those tested is 25 m wide by 3.5 m deep. These are nothing like the massive shelters in the Lower Pecos region of southwestern Texas (Bement 1989), but Fort Hood shelters are very similar in size to other shelters in Central Texas, such as those along Hog Creek (Henry et al. 1980; Henry 1995) at the north edge of Coryell County. The small size may restrict certain activities and limit long term use. In many instances Fort Hood shelters are so shallow front to back that they would not protect many individuals from inclement weather.

The limestone in which these shelters have been formed are not suitable surfaces for rock art. At present, no pictographs or petroglyphs have been identified in any Fort Hood shelter. However, the nature of the soft limestone surfaces and moist conditions would not facilitate preservation of these art forms, even if they had once been in place. The following two sections present synthetic discussions of the cultural record and geomorphic record preserved in these tested shelters.

10.1 CULTURAL OBSERVATIONS

With the exception of 41BL432, cultural material was discovered in each shelter investigated (Table 10.2), indicating all were loci of prehistoric cultural activity. At 41BL432, the shelter lacked significant internal matrix to test, so only the tufa mound was investigated for its paleoenvironmental potential. The shelter at 41CV1011 had been vandalized to such an extent that all testing was conducted on the talus slope in front of the shelter itself.

Intact burials were discovered in shelters 41CV901 and 41BL744. In addition, scattered human bones not in situ were discovered at five other shelters (see Table 10.1). Pursuant to a directive from Fort Hood, the human burial discovered just below the surface at 41CV901 and all other cultural material excavated was immediately reinterred. Thus far, none of the tested shelters yielded multiple burials. However, the shelters, more so than any other location, are important burial sites and could provide valuable information on human populations.

When compared to open campsites, these 37 shelters reveal a similar diversity of materials; burned rock, lithic debitage, stone tools, bone and mussel shell are all present in nearly every shelter. Mussel shell umbos are by far the least represented (less than 1% of the total recovered assemblage from shelters) with an average of only four umbos per cubic meter. Nonetheless, the shelter at 41BL433 yielded 49 umbos per cubic meter. This anomalously high frequency may represent part of a specific activity area, but other cultural materials

Table 10.1 Summary of Tested Rockshelters at Fort Hood.

Site	Subdivision	Dimensions (m)	Test Unit No.	Maximum Depth (cm)	Volume m^3	Sediment Types[1]	Notes[2]
41BL168	Shelter C	9 x 1	4, 5	90	1.5	3	
	Shelter E	9 x 1.5	1, 2, 3	37	0.9	3	
41BL198	-	40 x 6	3, 4	30	0.5	1, 5	Human remains
41BL432	-	12 x 5	tufa only	n/a	-	1, 5	Tufa sampled
41BL433	-	12 x 3.5	1, 2, 3	60	1.7	1, 3	
41BL504	-	15 x 3	1	68	0.7	1 ,4	
41BL531	-	9 x 4.5	1, 2, 3	80	1.1	1, 3, 4	Heavily vandalized
41BL538	-	14 x 3	1, 2, 3	60	1.4	1	1 hearth
41BL560	Shelter A	10 x 1.5	3	80	0.8	1	
	Shelter C	10 x 2.5	2	90	0.9	1, 3	
	Shelter D	11 x 1.1	1	80	0.8	1, 3	
	Shelter G	20 x 2	4, 5	60	1.1	3	
41BL567	-	30 x 3	1, 2	56	1.1	1	2 Hearths
41BL568	Shelter C	5 x 2.5	1, 2	40	0.4	1, 3, 4	
41BL744	-	26 x 6	1, 2, 3	60	1.5	1	Human remains, F1
41BL754	-	12 x 1	1, 2, 3	62	2.0	1, 3	
41BL765	-	40 x 5	2, 3, 4	62	0.9	1, 3, 5	Tufa sampled
41BL773	-	10 x 4.5	1,2,3,4, 5,	100	1.7	1, 3	
41BL844	Shelter A	13 x 3	5	70	0.7	1, 4	
	Alcove	1 x 1	9	50	0.4	3	
	Shelter B	15 x 5	6, 10	90	1.5	1, 3	Human remains Occupation zone
	Shelter D	16.5 x 3.5	2	130	1.3	1, 3	
	Shelter E	14 x 3.5	8, 11	97	1.5	1, 3	
41BL886	Shelter A	25 x 5	1, 2, 3, 4	190	5.6	1, 5	
	Shelter B	3 x 2	5, 6, 7	90	1.2	1	
41CV115	Shelter A	22 x 8	2, 3	100	1.3	1	2 Features
41CV125	Shelter B	12 x 4	1, 2	60	0.7	3, 4	Human remains
41CV901	-	18 x 2	1	20	0.2	1	Human burial, F1
41CV905	Shelter A	10 x 2.5	2, 3	110	1.8	1, 3	
	Shelter B	29 x 5	5, 6	230	3.9	1, 3	4070 BP charcoal
	Shelter C	20 x 5	4	90	0.9	1, 3	
41CV935	-	50 x 10	1, 2	25	0.4	1, 3, 5	Human remains
41CV1008	-	45 x 7	2, 3	23	0.6	1, 3	Human remains
41CV1011	Shelter A	n/a	1, 2, 3	150	2.7	n/a	Testing talus only
41CV1080	-	9 x 2	2	90	0.9	3	
41CV1085	-	15 x 5	1, 2, 3, 4	118	3.1	1	1 Hearth
41CV1166	-	3 x 2	1	30	0.4	1	1 Hearth

[1] See Table 9.15.
[2] All human remains were reinterred.

Table 10.2 Cultural Materials Recovered from Tested Rockshelters on Fort Hood.

Site	Shelter	Bivalve Shell Umbo	Bone Debitage	Bone Tool	Grd/pcked stone	Historic	Lithic Core	Lithic Debitage	Lithic microdebitage	Lithic Point	Lithic Tool	Modified Shell	Burned Rock	Total	Excavated Volume	Density per m^3
41BL168	C	8	10	0	0	2	0	875	720	2	3	0	25	1645	1.5	1096
	E	4	9	0	0	1	0	772	1519	2	5	0	53	2365	0.9	2628
41BL198	site	1	30	0	0	0	0	0	0	0	0	0	2	33	0.5	66
41BL432	site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41BL433	site	83	219	0	0	0	4	4563	170	12	61	0	86	5198	1.7	3058
41BL504	site	3	11	0	0	0	2	474	6	5	10	0	16	527	0.7	753
41BL531	site	1	105	0	0	1	0	88	3	0	2	0	9	209	1.1	190
41BL538	site	0	23	0	0	0	0	4	1	0	1	0	0	29	1.4	21
41BL560	A	0	0	0	0	0	0	14	3	0	1	0	2	20	0.8	25
	C	0	28	0	0	0	0	41	5	0	0	0	0	74	0.9	82
	D	0	0	0	0	0	0	29	7	0	0	0	0	36	0.8	45
	G	1	27	0	0	1	1	184	9	0	6	0	0	229	1.1	208
41BL567	site	24	72	0	0	0	0	1033	69	12	6	0	43	1259	1.1	1145
41BL568	C	0	4	0	0	0	0	14	3	0	0	0	12	33	0.4	83
41BL744	site	8	79	0	0	18	1	131	84	0	1	0	15	337	1.5	225
41BL754	site	4	94	0	0	0	1	926	60	5	13	0	34	1137	2	569
41BL765	site	9	1	0	0	0	2	159	36	2	3	0	21	233	0.9	259
41BL773	site	0	32	0	0	0	0	351	6	5	5	0	36	435	1.7	256
41BL844	A	3	61	0	0	0	2	1391	6	4	10	0	9	1486	0.7	2123
	Alcove	1	297	0	0	0	0	495	0	0	10	0	8	811	0.4	2028
	B	4	144	0	0	0	1	1457	9	7	15	0	91	1728	1.5	1152
	D	5	143	0	0	0	0	1385	9	7	10	0	63	1622	1.3	2134
	E	2	64	0	0	0	0	117	4	2	7	0	8	204	1.5	136
41BL886	A	0	128	0	0	2	1	312	42	6	2	0	23	516	5.6	92
	B	1	346	1	0	0	0	34	3	0	0	0	8	393	1.2	328
41CV115	A	18	490	1	1	7	2	3495	15	7	21	0	300	4357	1.3	3352
41CV125	B	3	87	0	0	0	0	481	5	1	9	0	44	630	0.7	900
41CV901	site	0	0	0	0	0	0	0	0	0	0	0	28	28	0.2	140
41CV905	A	0	0	0	0	0	0	22	7	0	0	0	0	29	1.8	16
	B	2	11	0	1	0	2	736	24	3	15	0	44	838	3.9	215
	C	0	0	0	0	0	0	4	6	0	0	0	0	10	0.9	11
41CV935	site	2	203	0	0	0	0	1304	2	8	15	2	20	1556	0.4	3890
41CV1008	site	2	262	0	0	0	0	864	4	8	14	0	0	1154	0.6	1923
41CV1011	A	6	432	0	0	0	4	2560	0	18	98	0	151	3269	2.6	1257
41CV1080	site	2	325	0	0	0	0	718	9	8	7	0	18	1087	0.9	1208
41CV1085	site	1	2	0	0	1	0	458	75	6	15	0	30	588	3.1	190
41CV1166	site	2	1	0	0	0	0	340	2	3	2	0	34	384	0.4	960
Total	-	**200**	**3740**	**2**	**2**	**33**	**23**	**25831**	**2923**	**133**	**367**	**2**	**1233**	**34489**	**48**	**719**

are also represented. Stone tools, cores, and points (n=523) are the second least frequent category accounting for only 1.5% of the total shelter assemblages at a rate of about 14 tools per site. The shelter at 41BL433 has 77 stone tools (45 tools/m^3) and is by far the most prolific in terms of tools. The 120 tools at 41CV1011 are from the talus slope and not from inside the shelter, therefore not directly comparable. The average number of tools is only 11 tools/m^3. Surprisingly, burned rock with 1,233 pieces and only 3.5% of the assemblage is relatively sparse. Bone debris (n=3,740) is well represented in terms density and number. Lithic debitage is by far the most dominant material remains with 25,831 pieces (75% of the total), equal to 538 lithics/m^3, or 698 pieces per site. Six shelters plus the talus slope at 41CV1011 have about or more than twice the average number of lithic debitage. In general terms, the material types and frequencies detected, reflect similar activities as observed at open camps and should probably be viewed as campsites as well. The human remains at some shelters in with the camp deposits does reveal a second and more specific function.

The excavations revealed seven hearth features within the shelters. These include two basin hearths with no rock (41BL567 and 41CV115), one basin hearth with rock (41CV115), two flat hearths with angular rock (41BL567 and 41CV1166), and one slab lined hearth (41BL538). These hearths types, similar to those at the open camps, support the interpretation that these shelters functioned as small camping areas.

We recovered a total of 367 stone tools from these 37 shelters (Table 10.3) with an average of nearly 10 tools per shelter. The shelter at 41BL433 and the talus slope at 41CV1011, have extremely high frequencies, but eight shelters yielded no stone tools. Large tools including hammerstones, choppers, gouges, crushing/abrading tools represent only about 4% of the recovered tool assemblage. Formal scrapers account for 6% and all bifaces another 30%. Flake tools (including utilized flakes, spokeshaves, edge modified flakes, gravers, and denticulates) account for 58% of all tools. As expected, the two sites with the highest frequency of cores, 41BL433 and 41CV1011, correspond with two of the three highest incidence of debitage and high frequencies of stone tools. The diversity represented in these tools supports multifunctional activities and thus generalized camping activities.

A total of 3,740 pieces of bone was recovered from the 37 shelters, ranging from single specimens each at 41BL765 and 41CV1166 to 490 pieces at 41CV115. With an average of about 102 pieces per shelter, 11 shelters have higher than average frequencies, leaving 26 with less than average frequencies. More than 300 specimens of bone were recovered from each of sites 41BL886 (Shelter B), 41CV1080, 41CV1011 (talus slope), and 41CV115.

A very wide range of taxa is represented and includes amphibians, birds, large mammals, small rodents, opossums, turtles, bear, and snakes. Three categories, medium to large mammals, large to very large mammals, and a general vertebra account for 60% of the pieces with each represented by 19 to 22%. It is assumed that not all the species identified represent human activity as other animals also utilized these shelters. Direct evidence of human intervention is generally through evidence of cut marks and burned pieces. Here, only five pieces (less than 1%) reveal cut marks; all of these are from 41BL886. They include two medium to large mammal fragments, a deer size piece, one deer piece, and a opossum piece. Nearly 34% (n=1,265) of the bones are burned with 91% of those burned, represented by only four categories. Those categories include medium to large mammals (31%), large to very large mammals (26%), general vertebrae (21%), and small to medium mammals (13%).

Part of the high bone frequency in Shelter B at 41BL886 is attributed to numerous elements of small rodents and other animals which we believe to be non-cultural. These include 31 bones of opossum, 19 bones of rats, three bird bones, and nine bones of carnivores. It is possible these were

Table 10.3 Lithic Tools Recovered from Tested Rockshelters on Fort Hood.

		Tool Types																							
Site	Shelter	Adze	Chopper Type A	Chopper Type B	Clear Fork Type B	Complex scraper	Crushing/Abrading	Denticulate	Drill	Early stage biface	Edge modified	End scraper	Finished biface	Graver	Hammerstone	Indeterminate	Late stage biface	Middle stage biface	Preform	Side scraper	Spokeshave	Uniface	Utilized Flake	Wedge	Total
41BL168	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	3
	E	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	1	1	0	0	0	0	0	0	5
41BL198	site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41BL432	site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41BL433	site	0	0	0	0	0	0	1	0	3	5	2	6	2	0	0	13	3	0	3	2	0	21	0	61
41BL504	site	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	0	0	0	0	0	6	0	10
41BL531	site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
41BL538	site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
41BL560	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	4	0	6
41BL567	site	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	1	0	0	0	1	0	1	0	6
41BL568	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41BL744	site	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
41BL754	site	0	0	0	0	0	0	0	0	0	3	0	1	1	0	0	4	0	0	2	0	0	2	0	13
41BL765	site	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	3
41BL773	site	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	2	0	5
41BL844	A	0	0	0	0	0	0	0	0	0	3	0	1	0	0	0	0	1	0	1	0	0	4	0	10
	Alcove	0	1	0	0	0	0	0	0	1	1	0	1	0	0	0	1	1	0	0	0	0	4	0	10
	B	0	0	1	0	1	0	0	0	0	2	0	0	0	0	0	1	2	0	0	1	0	7	0	15
	D	0	0	0	0	0	0	0	0	0	2	0	3	0	1	0	1	0	0	0	0	0	2	0	9
		0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	5	0	7
41BL886	A	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41CV115	A	0	0	0	0	0	0	0	1	0	6	0	1	0	0	1	5	1	0	1	1	0	5	0	22
41CV125	B	0	0	0	0	0	1	1	0	0	4	0	0	0	0	0	0	0	0	0	0	0	3	0	9
41CV901	site	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0		0	0	0		0
41CV905	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	B	0	0	0	0	0	0	0	0	1	2	0	2	0	0	0	2	0	0	2	0	0	6	0	15
	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41CV935	site	0	0	0	0	0	0	0	1	0	2	0	1	1	0	0	0	2	0	0	0	0	8	0	15
41CV1008	site	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	4	2	0	0	0	4	1	14
41CV1011	A	0	0	1	0	1	5	0	1	1	10	4	8	2	0	0	9	7	0	4	3	1	41	0	98
41CV1080	site	0	0	0	1	0	0	0	1	0	1	0	1	0	0	0	1	1	0	0	0	0	1	0	7
41CV1085	site	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	1	0	0	0	0	11	0	15
41CV1166	site	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2
Total	-	**1**	**1**	**2**	**1**	**2**	**6**	**2**	**5**	**6**	**50**	**6**	**31**	**8**	**4**	**1**	**46**	**25**	**2**	**13**	**10**	**1**	**143**	**1**	**367**

part of the human subsistence resources, but caution must be used in assuming that all the bones in these locations are attributed to human use.

Cultural material density varied considerably, from a low of 11 items/m^3 in Shelter C at 41CV905 to a high of 3,890 items/m^3 at 41CV935 (Table 10.4). Dense material reveals intensively used shelters that could represent either intermediate to long term habitation sites or multiple occupations. By contrast, low cultural density in shelters may well represent short-term occupations or single events. It may be that these lower density shelters provide the best context to investigate time specific and culturally related activities.

High density shelters are typified by a rich, diverse artifact assemblages including fauna, lithics, stone tools, and burned rock. Seven shelters are extremely rich and reveal densities of over 2,000 items/m^3: 41BL168 (shelter E); 41BL433; 41BL844 (shelters A and D and the alcove); 41CV115; and 41CV935. Collectively, these seven shelters (19% of the investigated shelters) account for 50% of the total shelter remains including 30% of the projectile points, 36% of the stone tools, and cores, 52% of the lithic debitage, 44% of the burned rock, and 38% of the faunal material recovered from all 37 investigated shelters (see Table 10.4). This implies these seven shelters may contain relatively long-term occupations where a broad range of activities were routinely pursued, or they represent palimpsest occupations over unknown time. In general, these shelters exhibit a higher tool to debitage ratio than exhibited by the intensely occupied shelters, suggesting that many of the tools were manufactured elsewhere and carried in to the shelter.

Still other shelters appear to represent short-term occupations where a limited suite of activities were conducted. The best example of this type of assemblage is provided by 41BL538, although 41BL198, 41BL568, 41BL744, 41BL765, and 41CV1085 also conform to this broad pattern. Here again, the relative frequency of tools and projectile points tends to be greater than the relative frequency of debitage, suggesting that most tools were manufactured elsewhere and carried in. However, at least one of the relatively low-return shelters (e.g., 41CV1085) did produce a quantity of debitage. The relative frequency of faunal remains is variable, suggesting that while some of the shelters were probably butchering/cooking loci, food preparation was not particularly important in others.

Although only a limited number of flotation samples (n=30) were submitted for botanical analyses, macrobotanical remains recovered from the shelters were very sparse. Moreover, fully half of the recovery consists of uncarbonized remains, which almost certainly represent intrusive modern material (see Appendix G). The majority of carbonized remains consist of wood charcoal (juniper, live oak, pecan, sycamore, white oak, and willow) that probably represent fuel consumed in features. The only remains that potentia represent food remains (c.f. Medsger 1973) are a walnut shell fragment, a hackberry seed, and a milk vetch (*Vicia* sp.) seed.

Temporal patterns of occupation in the shelters are broadly consistent with trends noted during the preceding reconnaissance phase and elsewhere in Central Texas (Abbott 1994). Three distinct types of temporal data were collected from rockshelters during the testing phase. The first of these, diagnostic projectile points, is the most time-honored mechanism of temporal inference in Central Texas archeology, and the most open to criticism (cf. Ellis et al. 1994:42-58). Projectile points recovered during testing are summarized in Table 10.5. Although two Early Archaic points (Gower and Uvalde), two Middle Archaic points (Pedernales and Travis), 11 Late Archaic points, and 19 other dart points were recovered, these dart forms represent only about 25% of the total points. The majority of points (75%) post date Archaic times. Late Prehistoric I occupations are evidenced by 36 Scallorn (27%) points. Late Prehistoric II period points, including the Bonham, Bulbar, Cameron, Clifton, Fresno, and Perdiz types, account for 16% of the total. Although the

Table 10.4 Comparison of Artifact Densities from Tested Rockshelt‹rs on Fort Hood.

Site	Shelter	Bivalve Shell Umbo	Bone Debitage	Bone Tool	Grd/pcked stone	Historic	Lithic Core	Lithic Debitage	Lithic microdebitage	Lithic Point	Lithic Tool	Modified Shell	Burned rock	Total	Excavated Volume	Density per m3
BL168	C	8	7	0	0	2	0	194	12	2	3	0	25	253	1.5	168
	E	4	7	0	0	1	0	254	17	2	5	0	53	343	0.9	381
BL198	-	1	5	0	0	0	0	0	0	0	0	0	2	8	0.5	16
BL432	-	0	0	0	0	0	0	0	0	0	0	0	0	na	0	na
BL433	-	52	94	0	0	0	4	777	8	12	61	0	86	1094	1.7	643
BL504	-	3	9	0	0	0	2	151	6	5	10	0	16	202	0.7	288
BL531	-	1	78	0	0	1	0	44	3	0	2	0	9	138	1.1	125
BL538	-	0	15	0	0	0	0	4	1	0	1	0	0	21	1.4	15
BL560	A	0	0	0	0	0	0	13	3	0	1	0	2	19	0.8	24
	C	0	22	0	0	0	0	30	5	0	0	0	0	57	0.9	63
	D	0	0	0	0	0	0	27	7	0	0	0	0	34	0.8	43
	G	1	18	0	0	1	1	124	9	0	6	0	0	160	1.1	145
BL567	-	2	24	0	0	0	0	245	5	12	6	0	43	337	1.1	306
BL568	C	0	3	0	0	0	0	11	3	0	0	0	12	29	0.4	72
BL744	-	8	48	0	0	3	1	86	9	0	1	0	15	171	1.5	114
BL754	-	1	43	0	0	0	1	281	9	5	13	0	34	387	2	194
BL765	-	6	1	0	0	0	2	55	4	2	3	0	21	94	0.9	104
BL773	-	0	19	0	0	0	0	172	6	5	5	0	36	243	1.7	143
BL844	A	3	32	0	0	0	2	373	6	4	10	0	9	439	0.7	627
	Alcove	1	80	0	0	0	0	205	0	0	10	0	8	304	0.4	760
	B	4	77	0	0	0	1	340	9	7	15	0	91	544	1.5	363
	D	5	52	0	0	0	0	357	9	7	10	0	63	503	1.3	387
	E	2	43	0	0	0	0	69	4	2	7	0	8	135	1.5	90
BL886	A	0	83	0	0	2	1	120	11	6	2	0	23	248	5.6	44
	B	1	203	1	0	0	0	29	2	0	0	0	8	244	1.2	203
CV115	A	13	153	1	1	3	2	593	15	7	21	0	300	1109	1.3	853
CV125	B	3	39	0	0	0	0	184	5	1	9	0	44	285	0.7	407
CV901	-	0	0	0	0	0	0	0	0	0	0	0	28	28	0.2	140
CV905	A	0	0	0	0	0	0	19	7	0	0	0	0	26	1.8	14
	B	2	9	0	1	0	2	299	24	3	15	0	44	399	3.9	102
	C	0	0	0	0	0	0	4	6	0	0	0	0	10	0.9	11
CV935	-	2	87	0	0	0	0	144	2	8	15	2	20	280	0.4	700
CV1008	-	2	102	0	0	0	0	181	4	8	14	0	0	311	0.6	518
CV1011	A	6	104	0	0	0	4	509	0	18	98	0	151	890	2.6	342
CV1080	-	2	137	0	0	0	0	230	9	8	7	0	18	411	0.9	457
CV1085	-	1	1	0	0	1	0	191	16	6	15	0	30	261	3.1	84
CV1166	-	2	1	0	0	0	0	101	2	3	2	0	34	145	0.4	363
Total	-	**136**	**1596**	**2**	**2**	**14**	**23**	**6416**	**238**	**133**	**367**	**2**	**1233**	**10162**	**48**	**211**

Table 10.5 Projectile Points Recovered from Tested Rockshelters on Fort Hood.

		Projectile Points																				
Site	Shelter	Bonham	Bulbar Stemmed	Cameron	Castroville	Clifton	Darl	Edgewood	Fairland	Fresno	Gower	Other Arrow	Other Dart	Other Point	Pedernales	Perdiz	Sabinal	Scallorn	Travis	Uvalde	Young	Total
41BL168	C	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2
	E	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
41BL433	site	3	0	0	0	0	0	0	0	0	0	3	3	0	0	1	0	2	0	0	0	12
41BL504	site	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	3	0	0	0	5
41BL567	site	0	0	0	0	0	1	0	0	1	0	2	3	2	0	0	0	3	0	0	0	12
41BL754	site	1	0	0	0	0	0	0	0	0	0	2	0	0	0	1	1	0	0	0	0	5
41BL765	site	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	2
41BL773	site	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	1	0	0	0	5
41BL844	A	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	4
	B	1	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	2	0	0	0	7
	D	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	4	0	0	0	7
	E	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2
41BL886	A	0	1	0	0	0	0	0	0	0	0	2	0	1	0	0	0	2	0	0	0	6
41CV115	A	0	0	0	0	0	0	0	0	0	0	2	2	0	0	1	0	1	0	1	0	7
41CV125	B	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
41CV905	B	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3
41CV935	site	1	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	3	0	0	1	8
41CV1008	site	3	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	3	0	0	0	8
41CV1011	A	0	0	0	0	1	2	1	1	0	0	2	3	0	1	1	0	6	0	0	0	18
41CV1080	site	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	4	0	0	0	8
41CV1085	site	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	0	1	0	0	6
41CV1166	site	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3
Total	-	9	3	1	1	1	7	2	1	4	1	33	19	4	1	6	1	36	1	1	1	133

most recent in time and one of the more frequent points in Central Texas, the Perdiz point accounts for only 4.5% of the points from these rockshelters. This issue is discussed further in Chapter 11.0. The presence of an Early Archaic dart point, such as the Uvalde from 41CV115, does not necessarily mean occupations of that age are present. This point appears to represent a collected and curated item as it was with a few arrow points and positioned stratigraphically above two absolute radiocarbon dates of 1260 and 1240 BP.

These relative age indicators fit well with the other two types of temporal data, which consist of (1) absolute radiocarbon ages on wood charcoal and snail shell, and (2) relative age estimates based on aggregate A/I ratios of *Rabdotus* snails regressed against radiocarbon-dated snails with known ratios (see Section 7.5 and Ellis and Goodfriend 1994).

As indicated in the Figure 10.1, the 24 absolute radiocarbon ages from 26 shelter sites range from modern at 41BL531 to 4070 BP at 41CV905. This earliest assay is fully 1,500 years early than the second oldest assay, 2610 BP, from 41CV1011 talus deposits. Although this 4070 BP assay is an apparent outlier, it is believed that it indicates that at least some shelters contain relatively early matrix (see discussion of geomorphology below). For this reason this outlier was not rejected as a bad assay. This 4070 BP assay comes from Shelter B, exhibiting the deepest shelter deposits

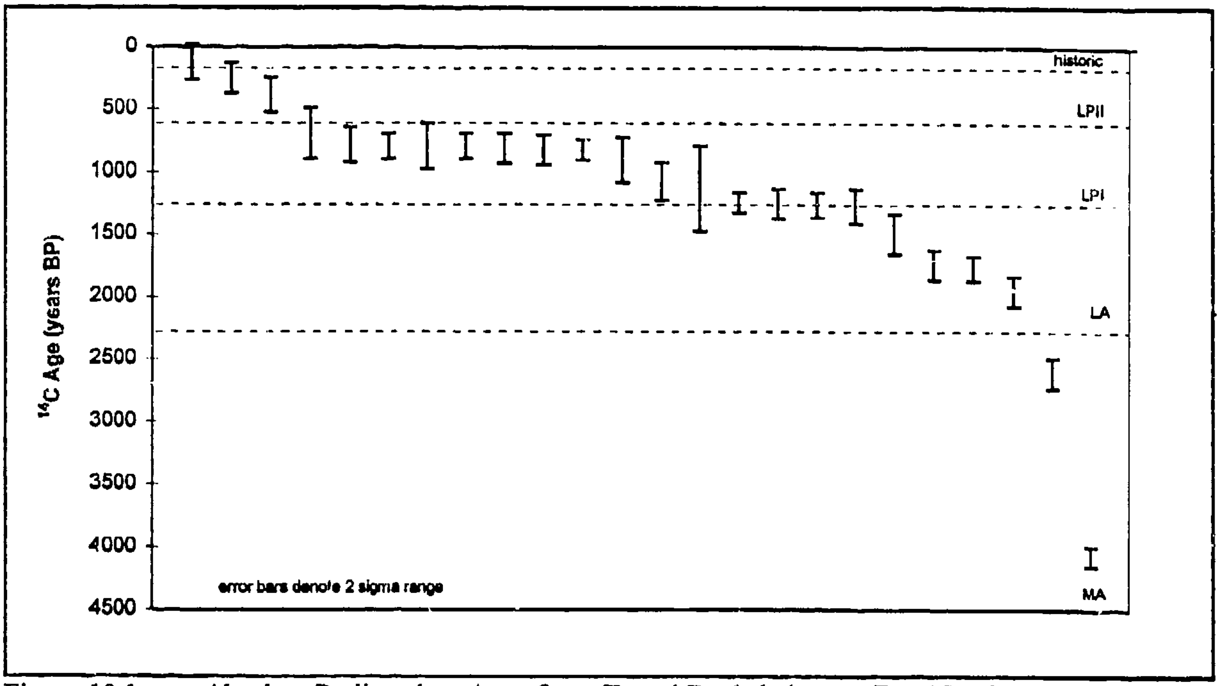


Figure 10.1 Absolute Radiocarbon Ages from Tested Rockshelters at Fort Hood.

discovered. An untyped dart fragment was associated with this early date in an cultural occupation zone between 90 to 120 cmbs. This isolated zone was stratigraphically below Late Archaic and Late Prehistoric occupations higher in the profile.

Average radiocarbon-equivalent A/I ratios on *Rabdotus* from tested shelters at 41BL168, 41BL433, 41BL754, 41BL765, and 41CV115 extend over the initial 2500 BP range. That trend suggests that the general age of most shelters is within the last 2,500 years. The 24 absolute radiocarbon assays coupled with the relative ages assigned to the 133 projectile points and the *Rabdotus* A/I snail ratios indicate that cultural occupation of shelters on Fort Hood was, for the most part, a phenomenon of the Late Archaic and Late Prehistoric I times. The one early date of 4070 BP does indicate that some shelters may contain earlier deposits, but these are rare.

While the patterns and observations from these 37 tested shelters above are interesting, it must be noted that they are the product of limited excavations (48 m^3) and may not be representative of shelters as a whole. In most cases, our excavation units were situated to avoid obvious vandal pits, and thus may have missed the most productive areas of the shelters (many of which are probably largely destroyed, anyway). Excavations terminated at massive rock, but it is possible these rocks represent roof fall with older cultural deposits below them. Therefore, the preceding should be considered as preliminary observations only.

10.2 GEOMORPHIC AND STRATIGRAPHIC OBSERVATIONS

Examination of more than 150 rockshelters and karstic sinkholes on Fort Hood during reconnaissance phase investigations (Trierweiler 1994) resulted in the identification of six distinct types of fill sediment (Abbott 1994:341-346). Subsequently, these sediment type definitions were modified based on information obtained during the initial testing of 16 shelters (Abbott 1995). This modified typology (Table 10.6) appears to represent the range of variability in shelter sediments relatively well, and is also used in this report. The following paragraphs describe the character of these sediments in the shelters on Fort Hood.

Type 1 Sediments

These represent limestone powder and eboulis derived from decomposition of the shelter walls and roof that have been subjected to relatively little pedogenic modification. This sediment type was the most common type encountered during the testing phase, occurring in 83% of the tested shelters (note that roughly 50% of the shelters investigated included more than one of the types). Although originally interpreted as being of exclusively inorganic origin (Abbott 1994), the revised typology recognized that two other sources of sediment probably also contribute to the overall suite of Type 1 sediments (Abbott 1995). The first consists of ash, which is the inorganic byproduct that remains following the complete combustion of plant products. Although it is recognized in micromorphological studies of archeological

Table 10.6 Comparison of Sediment Types from Testing of Rockshelters on Fort Hood.

Sediment Type	Abbott 1994		Modification (Abbott 1995)	
	Description	Origin	Description	Origin
1	Light gray, gray-brown, yellowish brown or tan silt with various amounts of coarse limestone spall	Internal Decomposition of shelter walls and roof	As described previously, also includes sediments with high ash content and/or high organic content, particularly leaf litter or other organic matter decomposing in a relatively dry microenvironment	As described previously, but also includes additions of cultural sediment (e.g., ash) and organic sediment (e.g., decomposing leaf litter) blown, washed, or dropped into the shelter
2	Stratified, multicolored (red, orange, yellow, brown, gray, black, or white) silts with variable amounts of coarse incorporated spall and organic lenses	Internal Decomposition of shelter walls and roof; redox reactions due to intermittent saturation; organic-rich cultural strata	As described previously	As described previously
3	Dark grayish brown to black clay loam or stony clay loam; includes varying amounts of coarse limestone spall	Primarily deposition of external sediment derived from erosion of upland A horizon	As described previously	Probably much more weathered internal sediment than previously indicated
4	Reddish brown to red clay loam and stony clay loam	External sediment derived from erosion of upland Bt horizon; introduced over bluff and through spring conduits	As described previously; usually structureless, occasionally may exhibit weak to moderate blocky structure	Predominantly as described previously; in a few instances, the blocky structured sediment appears to represent an in situ (and hence, much older) Bt horizon
5	Tufa and travertine	Precipitation from groundwater in situ	As described previously, tufa predominant, commonly associated with abundant algae colonies	As described previously
6	Coarse lag/flushed shelters	Lack of accumulation and/or flushing by overland flow or groundwater discharge	As described previously	As described previously

sediments (e.g., Courty 1990), surprisingly little attention has been paid to ash either as an anthropic sediment in general (Stein 1985; Waters 1992) or as a component of rockshelter sediment in particular (e.g., Farrand 1985; Butzer 1978). In fact, although it appears to be composed largely of calcite crystals and silica (the latter probably representing the remains of plant phytoliths), the composition of ash, the biochemical transformations that create it, and the mass/volume ratios between fuel and resulting ash are poorly understood. Nevertheless, passive observation suggests that even a single campfire can produce an appreciable volume of ash, while innumerable fires built in a rockshelter, where much of the ash could be retained rather than blown away, could form a significant component of the overall fill. Examination of the various exposures provided in the rockshelters suggests that this ash is frequently present, both as discrete lenses which are usually readily identified, and often as material dispersed throughout the matrix, which makes it much more difficult to judge its relative volumetric contribution. The evidence for ash inclusion is admittedly subjective; usually it consists of a grayish color and an ashy feel, which is very similar to the powdery feel of dry, unaltered shelter silt. Color of the Type 1 deposits appears to be relatively unaffected by the inclusion of ash, at best resulting in a slight shift towards lower Munsell chroma values. Incorporation of the ash into the sediment probably occurs by a variety of processes, not the least of which is bioturbation by the same people building the fires in the first place. As noted previously (Abbott 1994; 1995; Ellis et al. 1994b) the upper few centimeters of the typical dry, powdery (Type 1) shelter sediment is highly susceptible to mixing with even minimal amounts of foot traffic. Therefore, while ash is believed to be a frequently significant component of Type 1 sediments (and possibly of several of the other sediment types as well), assessment of its importance will require chemical and/or micromorphological analysis of shelter sediments.

Another component that appears to be occasionally represented in Type 1 sediment is finely divided but relatively undecomposed organic matter. Organic matter is a major component of Type 3 sediments, as has been noted previously (Abbott 1994; 1995) and also probably occasionally represents appreciable fractions of Type 2, 4, and 5 sediments. Field inspection during the testing phase suggests that it can also be a major component of Type 1 sediments as well, but once again this conclusion is not yet supported by empirical laboratory data. This organic matter may have several sources, but most of it appears to represent disintegration of leaf litter (frequently juniper needles) blown, dropped, or (rarely) washed into the shelter setting. In some cases, much of the organic matter may have been introduced into the rockshelter through cultural activity. The major distinction that separates this variant of Type 1 sediments from the organic component of Type 3 sediment appears to be dry decomposition, which renders it a loose, grayish powder rather than the black colloidal material resulting from chemical decomposition in the presence of appreciable moisture. Once again, this conclusion is preliminary and must be confirmed by detailed chemical and/or micromorphological analysis of the shelter sediments. Typically, inclusion of this type of organic matter appears to result in a slight decrease in Munsell value (i.e., 4/ or 5/ rather than 6/ or 7/) relative to low-organic Type 1 sediments.

Type 2 Sediments

These sediments represent stratified, multicolored silts that are interbedded with coarse eboulis and organic lenses. They represent an end member related to Type 1 that have been substantially and differentially altered by redox reactions due to periodic groundwater discharge and/or intense heating, incorporation of cultural detritus, and variable degrees of weathering. Color in these sediments may range from 5YR to 2.5Y hues with wide variability in value and chroma. In most cases, it is likely that these deposits represent relatively old matrix that has been substantially altered by diagenetic processes, although in some cases they may reflect only relatively intense occupation within the typical time range (i.e., relatively typical Type 1 sediments intricately interstratified with zones affected by charcoal and/or ash concentration, organic staining, and subhorizontal reddish or orange oxidation due to burning). No Type 2 sediments were identified in the testing phase, and they were only noted in five (3%) of the 135 shelters recorded during the reconnaissance phase of investigation (Trierweiler 1994). However, several culturally-modified strata that could have been classified as Type 2 were noted; these deposits were included in the Type 1 sample because they were clearly modified by human activity.

Type 3 Sediments

Type 3 sediments were originally interpreted primarily as exogamous fill derived from erosion of the A horizon of soils outside the shelter (Abbott 1994), and in many cases this indeed seems to be the case. However, observations during the testing phase suggest that much of this sediment actually represents pedogenically altered endogamous deposits. Although direct evidence of sedimentation from outside the shelter was noted several times, one of the primary reasons that most of the material was previously interpreted as externally-derived soil material was that no mechanism of substantial organic incorporation, such as is evident in Type 3 sediments, was envisioned for areas inside the shelter. However, during the testing phase, several instances were observed where lightly weathered internal sediments (Type 1) merged laterally into highly weathered (Type 3) sediments at or near the drip line with no discernable stratigraphic contact between them (see Figure 5.168). Moreover, the overall testing experience suggests that most periodically wetted sediments in shelters are either dark black clay loams (Type 3) or tufa (Type 5), suggesting that this type of deposit may arise spontaneously from weathering of the light gray limestone silt under moist conditions. In most cases, the moist soils are wetted by seasonal seep discharge at the rear of the shelter. The organic fraction appears to arise from several sources: (1) incorporation and decomposition of leaf litter (see the discussion of Type 1 sediments); (2) the decomposition of roots growing in the moist areas; and (3) the incorporation and decomposition of algae and lichen growing on the moist surfaces (which appears to be a major contributor to the organic content in many cases). Thus, while some Type 3 sediments do appear to represent eroded and redeposited A horizons, much more than previously believed--probably the majority of the examined Type 3 deposits--appear to represent in situ pedogenesis.

Type 3 sediments are the second most common type of rockshelter sediments noted in the tested sample, occurring in 22 (59%) of the 37 investigated shelters. In all but five cases, Type 1 sediments were also present within these shelters.

Type 4 Sediments

These are typically structureless or weakly structured, reddish brown to red stony clay sediments previously interpreted as exogamous sediment derived from erosion of ancient upland Bt horizons (Abbott 1994). While most of these sediments are still believed to be the result of this process, at least one shelter (41BL504) exhibited characteristics (strong angular blocky structure, color variation with depth) that suggest that it represents a Bt horizon developed in situ. This implies that the shelter has been extant and relatively stable for a considerable period, and thus represents an anomaly among shelters on Fort Hood investigated to this point. The only other well documented example to this point is an as yet unpublished shelter tested by Prewitt and Associates (41BL581, rockshelter B) that contained a rubified, moderately structured clayey (i.e., Type 4) fill, and yielded a radiocarbon age of approximately 10,000 BP (Douglas Boyd, personal communication 1996). Therefore, like Type 3 sediments, the presence of Type 4 sediments can no longer be considered automatically indicative of outside sedimentation in the rockshelters on Fort Hood.

Type 4 sediments were encountered in only five (14%) of the 37 tested shelters. Of these, one shelter appeared to represent long-term weathering of in situ material (41BL504), two clearly represented reworked upland sediment (41BL531 and 41CV125), and two others were considered to probably represent sediment reworking (41BL568 and 41BL844, Shelter A).

Type 5 Sediments

Type 5 sediments consist of tufas and travertines. Tufa and travertine deposits represent chemically-precipitated calcium carbonate that form around springs, seeps, in stream channels, in caves, and occasionally on the margin of lakes. Because the deposits can accrete relatively rapidly, they have considerable potential utility for paleoenvironmental studies. Travertine consists of dense, thin-laminated to microlaminated carbonate, while tufa typically has a spongy to vesicular structure (Bates and Jackson 1984). Much of the spongy structure of tufa appears to result from accretion in and around a mat of algae or lichen. On Fort Hood, tufa and, to a lesser extent, travertine are common surrounding active and fossil seeps and springs issuing out of the backs of rockshelters. These deposits, which typically consist of yellowish brown to tan spongy tufa interbedded with organic lenses, vary from sheet deposits a few inches thick to mounds and columns with thicknesses of 2 m or more.

In rockshelters, the formation of tufa and travertine implies active groundwater discharge, and suggests that the rate of accretion should vary as a function of changes in regional precipitation. This general relationship has been confirmed by a number of researchers working at significantly longer time-scales (e.g., Harmon et al. 1977; Gordon et al. 1989; Szabo 1990). Thus, changes in the rate of travertine accumulation may provide a sensitive indicator of changes in precipitation rates throughout the Holocene (Abbott 1995). Dating of Type 5 deposits in the shelters would also go a long way toward answering the question of whether the majority of shelters initially formed in the late Holocene, or were simply flushed of previously accreted sediments during that time.

Five (14%) of the 37 investigated shelters contained obvious tufa or travertine. It is considered likely that similar deposits were present, but remained undetected, in a number of the other shelters.

Type 6 Sediments

This classification is used to describe shelters where erosion has flushed all fine-grained sediment away, leaving either bare limestone surfaces or a lag of coarse eboulis (and occasionally artifacts). Areas classed as Type 6 occur in almost every rockshelter, particularly beneath the dripline. Because stratigraphy is destroyed and the material, if present, represents a lag palimpsest, they have little archeological potential.

Interpretation

The interpretation of these sediments contrasts strongly with interpretations of five shelters excavated in the Hog Creek project area immediately north of Fort Hood (Kirby 1980a; Henry 1995). As at Fort Hood, radiocarbon ages from these shelters (Robertson Shelter, Five Goat Shelter, Windy Shelter, Opilionid Shelter, and Stone Rockshelter) suggest that the interstratified archeological remains, and the deposits that contain them, all date back no more than a few thousand years (Kirby 1980b; Henry 1995)(see below). However, the sediments in these shelters are described as aeolian silts and alluvial deposits. The aeolian deposits are paradoxically linked to a period of increasing moisture indicated primarily by gastropod (snail) data from the shelter deposits. Henry (1995) argues that the increased moisture led to aggradation of the floodplain, which in turn provided a ready source for eolian deflation. Although we have never visited these shelters, the descriptions of the sediments (Kirby 1980a) and the proximity of the environment allow us to categorically state that these aeolian deposits are not in fact wind-deposited silts, but rather equate with the Type 1 sediments defined on Fort Hood. Similarly, it is likely that the alluvial sediments equate to Type 3 deposits in the Fort Hood shelters, and thus do not necessarily imply an exogamous source for these sediments.

In addition to the sediment types, another consideration arising from geomorphic perspective on the rockshelter record concerns an apparent increase in rockshelter occupancy during the Late Archaic and Late Prehistoric that has been noted previously (eg., Shafer 1977; Thomas 1978) and is reflected in the temporal data collected during this phase of work (see Figure 34). These authors have attributed this phenomenon to possible shifts in climate and resulting drying of previously wet shelters, rendering them increasingly attractive for habitation. However, as noted previously (Abbott 1994; Abbott 1995) examination of the extant record from Central Texas shelters indicates that (1) while Late Archaic and Late Prehistoric remains are clearly dominant, the full range of cultural traditions is represented to some degree, and (2) there is little indication that sterile sediments of greater antiquity are typically preserved beneath the cultural strata. While no early occupations were detected in rockshelter contexts during the present study, the second point was strongly supported. In short, no substantial accumulations of older, sterile sediment were apparent beneath the cultural strata in the vast majority of the shelters investigated. This implies that (1) the rockshelters either formed initially during the Late Holocene, or (more likely) (2) were flushed of sediment by increased discharge during the period following the Altithermal. Thus, while the hypothesis advanced by Shafer (1977) and Thomas (1978) (that the shelters were too wet to be occupied prior to the Late Archaic) may be partially true, there is no evidence to support it because the sediments that would contain a record of occupation are no longer extant. In other words, even if the shelters were occupied during the presumed wet phase, no record would be preserved. More importantly, any record of shelter occupation predating the presumed wet phase (e.g., the Paleoindian, Early Archaic, and possibly Middle Archaic periods) would also be absent due to geomorphic bias.

10.3 DISCUSSION AND CONCLUSIONS

The ubiquitous rockshelters at Fort Hood were clearly a valuable resource for the prehistoric populations, particularly during the Late Archaic and Late Prehistoric I periods. These shelters contain a wealth of cultural data critical to understanding the cultural record of the region, and also have tremendous potential for paleoenvironmental research (Hall and Abbott 1995). Unfortunately, these same shelters have proven to be particularly vulnerable to vandalism, which is rapidly degrading the quality of the resource.

The productive talus slope at 41CV1011 indicates that these areas in front of many shelters may also contain a valuable record of occupation. The talus slopes were not typically investigated by our testing program. These areas have been minimally impacted by vandalism during the modern era. If a shelter was intensively occupied or occupied over a relatively long period, it is reasonable to assume that considerable quantities of cultural detritus will end up on the talus slope below the occupied shelter. This results from activities outside the overhang and periodic cleaning of the shelter interior, possibly preserving a record of the subsistence and technological systems. Despite this fact, the shelter talus was never the focus of looting activity, and many heavily damaged shelters are associated with relatively pristine talus slopes. Thus, we believe that even though deposits within shelters may have been almost totally destroyed by intense vandalism, the talus slope in front may still retain considerable data potential.

Another characteristic of rockshelters that is becoming increasingly obvious is their strong association with prehistoric burials. At least three well-defined burials were located in shelters or sinkholes (41BL744, F 1; 41CV1165, F 1; and 41CV901, F 1) and five additional shelter sites also yielded human bone. Because this characteristic renders them subject to additional federal laws (e.g., NAGPRA), it increases the urgency to implement management policies that will arrest the cycle of vandalism and preserve the resource.

11.0 OVERALL SUMMARY AND INTERPRETATIONS

J. Michael Quigg

This chapter presents a data summary from all 119 prehistoric sites that we tested between 1993 and 1995. These include eight sites we tested in our burned rock mound investigations of early 1993 (Quigg and Ellis 1994), the 57 sites in our first phase of NRHP testing during 1993-1994 (Abbott and Trierweiler 1995), and the 56 sites in our second phase of NRHP testing during 1994-1995 (this volume). Of the eight burned rock mound sites reported in Quigg and Ellis (1994), two sites (41BL743 and 41CV1027) were also included in the sample of 57 sites reported in Abbott and Trierweiler (1995). It is beyond our scope to summarize all of the data collected from Fort Hood over the years or compare our results to other investigations across central Texas.

As we have discussed in Chapter 4.0, the Analytical Units we have delineated for the 56 sites in our second phase of testing are based on the major temporal periods identified at each site. This use of the term Analytical Unit contrasts with the landform-based definition we used previously for the burned rock mound investigations and our first phase of testing. In order to standardize the usage of analytical units throughout the entire data base, we reassessed each of the previously tested sites and assigned temporal periods where possible. As a result, all test units in the 119 tested sites have been assigned to temporally-based analytic units. Table 11.1 lists all 119 sites with the analytical units identified on each site.

The six general temporal periods we have employed correspond broadly to Prewitt's five established periods in his Central Texas chronology (1981b; 1985). One difference is the substitution of our term "Late Prehistoric" for his "Neo-Archaic." We also subdivided the Late Prehistoric into two parts which we refer to as I and II, but which correspond temporally to his Austin and Toyah phase subdivisions. Our projected timing of all Late Prehistoric events remains unchanged as throughout the last 1,250 years. Austin and Toyah phases are still incorporated here, but the generic terminology (Late Prehistoric I and II) allows for other occupations (intervals/phases) during these times which do not yield the key diagnostics (Scallorn and Perdiz points) or which have a mixture of types. We suspect that occupations containing other arrow point styles (e.g., Bonham, Fresno, Washita) may represent occupations by groups from outside Prewitt's Central Texas region which utilized this area on a temporary basis, and are not part of either the Austin or Toyah phases.

The limited sample sizes from most of the 119 tested sites were deemed inappropriate with which to define entirely new phases (or in some cases, even to assign an event to an established phase based on a single point type). Another factor that caused problems in phase/period assignment, especially at phase/period junctures, was the suspected use of "old wood," which made the burning events we radiocarbon dated appear to be several hundred years older.

The 119 tested sites reveal a total of 264 analytical units. Less than half of these are actually definable to time periods. These include one Paleoindian period event, seven Early Archaic events, 27 Middle Archaic events, 37 Late Archaic events, 23 Late Prehistoric I events, and 14 Late Prehistoric II events. Many zones (n=97) could not be assigned to a specific period because they lacked adequate temporal information such as diagnostic artifacts (ceramics, projectile points) or dated organic material. Other levels/zones (n=59) had conflicting temporal information or were considered too mixed to be assigned to a specific period.

These 119 sites yielded more than 240,000 pieces of material from which to interpret patterns in prehistoric behavior. Four hundred and ninety-eight projectile points, coupled with 199 absolute radiocarbon assays and the general depositional units identified (see Nordt 1992; 1993) all

Table 11.1 Analytical Units Identified for 119 Tested Sites.

Site	Paleo-Indian	Early Archaic	Middle Archaic	Late Archaic	Late Prehistoric I	Late Prehistoric II	mixed	unclassified
41BL154	•	•	•	•			•	•
41BL168				•			•	•
41BL198								•
41BL208			•					•
41BL233			•	•	•		•	
41BL339				•			•	•
41BL415							•	•
41BL421								○
41BL427								•
41BL431								•
41BL432								•
41BL433							•	
41BL454								•
41BL470			•					•
41BL504					•		•	•
41BL513								•
41BL531							•	
41BL532			•					•
41BL538								•
41BL560				•				•
41BL564						•		
41BL567					•			•
41BL568								•
41BL598				•			•	•
41BL608					•		•	•
41BL740							•	•
41BL743							•	
41BL744							•	•
41BL751			•	•				•
41BL754						•		•
41BL755				•			•	•
41BL765							•	•
41BL773						•	•	•
41BL821			•	•			•	•
41BL834			•				•	•
41BL844					•		•	•
41BL850								•
41BL853								○
41BL886					•	•	•	•
41BL888						•	•	•
41CV44				•			•	•
41CV45								•
41CV46				•	•		•	•
41CV47					•		•	
41CV48			•				•	
41CV71								•
41CV88				•			•	•
41CV90								•
41CV95				•	•		•	•
41CV97			•	•	•	•	•	•
41CV98				•	•		•	•
41CV99			•				•	•
41CV115					•	•	•	•
41CV117			•	•			•	•
41CV124							•	
41CV125					•		•	•
41CV137			•				•	
41CV164						•		•
41CV174		•	•	•	•	•	•	•
41CV184		•		•			•	•
41CV201								•
41CV240								•
41CV271								•
41CV317					•			•
41CV319					•		•	•
41CV332								•
41CV378								•
41CV379				•			•	•
41CV380				•			•	
41CV389			•	•		•	•	•
41CV397								•
41CV403			•	•			•	•
41CV478		•						•
41CV481		•	•	•			•	•
41CV484								•
41CV493								•
41CV495			•	•				•
41CV582								•
41CV587				•			•	•
41CV594			•				•	
41CV595				•			•	•
41CV849								•
41CV900								•
41CV901								•
41CV905			•					•
41CV913								•
41CV918						•		•
41CV927								•
41CV935					•			
41CV936					•			
41CV960			•	•			•	•
41CV1007				•		•	•	•
41CV1008							•	
41CV1011					•		•	•
41CV1023							•	•
41CV1027			•					•
41CV1033								•
41CV1038			•	•		•		•
41CV1080				•	•			
41CV1085						•		•
41CV1097								
41CV1098								•
41CV1099								○
41CV1105		•	•				•	•
41CV1116							•	•
41CV1129		•		•				•
41CV1136			•	•				•
41CV1165				•			•	
41CV1166					•		•	•
41CV1167							•	•
41CV1195				•			•	
41CV1200				•	•			•
41CV1378			•				•	•
41CV1391				•	•		•	•
41CV1400								○
41CV1403			•					
41CV1423								•
41CV1471				•				•
41CV1472								•

○ site received trenching only; no artifacts or samples were recovered to permit temporal classification contribute to the assignment of these materials into the various analytical units. Radiocarbon assays include 142 on wood charcoal, 19 on charcoal/soil, 24 on Rabdotus snails, eight on sediment, four on bone, and two on carbonized seeds. In some instances, alternate period assignments could have been made depending on how one chooses to interpret the data. In general, we used a conservative approach in assigning excavation proveniences to analytical units. Problems arose when early diagnostics were recovered with later materials. This created uncertainty as to whether the older point type indicated a mixed deposit, or was a single item collected and reused at a later date. Both scenarios occur and other evidence was considered to arrive at a decision. When in doubt, we considered such an analytical unit as mixed. No doubt, some readers may disagree with some of our interpretations, but only further data collection will satisfactory resolve these questions.

The following six sections provide summaries of the six major time periods and incorporate discussions on cultural assemblages, chronology and phase assignment, subsistence, and general overall period trends and or observations through time. No doubt, many of our observed trends and interpretations will change in the future as more sites are tested, as excavation samples increase in size, and as chert resources become better defined. Following these six temporal discussions, Sections 11.7 and 11.8 provide brief summary statements about the mixed and unclassified analytical units. Finally, Section 11.9 provides a summary of our contributions toward four general research design issues.

11.1 PALEOINDIAN

11.1.1 Cultural Assemblage

Paleoindian materials (pre-8500 BP; Prewitt 1985) consist of a single occupation deeply buried at terrace site 41BL154, below 210 cmbs in Test Pits 2 and 4. This buried occupation, 1.7 m^3 in volume, along North Nolan Creek (Figure 11.1) lies in a variant of Nordt's (1993:14) Georgetown alluvium with matrix classified as a 3Assb soil horizon stratigraphically below younger Fort Hood alluvium and younger cultural materials. Sterile deposits did not exist between the Paleoindian and the Early Archaic materials immediately above them, but a noticeable increase in material frequency occurred below 210 cmbs. Paleoindian materials appeared concentrated in and just above the partial burned rock surface hearth (F 2) at 240 to 250 cmbs.

At 41BL154 cultural materials were vertically dispersed over about 50 cm in two separate 1 m test pits. Cultural material consists of one hearth feature, 582 pieces of lithic debitage, 22 stone tools, two cores, 64 bone fragments, 89 burned rocks, sparse charcoal and many snail shells. Unfortunately no diagnostic projectile points were recovered.

The single Paleoindian hearth consisted of a flat, single layer of burned rocks that formed a semi-circle over an area of 49 x 23 cm with no apparent basin. The hearth, cut in half by a backhoe trench, could not be measured and shape determination was impossible. Scattered burned rocks were in the immediate vicinity.

The 582 pieces of lithic debitage represent 387 pieces (66.5%) of indeterminate cherts with the identifiable pieces representing at least three general chert provinces in Fort Hood. The three provinces include West Range with three pieces of Anderson Mountain Gray, North Fort Range with four pieces of Gray/Brown/Green, 13 pieces of Fort Hood Yellow, and one piece of Owl Creek Black, and Southeast Range with 174 pieces of various cherts. The Southeast Range accounts for 89% of the total identifiable pieces and 29.9% of the overall total. 41BL154 lies in the Southeast Range chert province with immediate and easy access to these abundant chert resources. In the Southeast Range material, Heiner Lake Translucent Brown dominates with 151 pieces or 77.4% of the identifiable cherts and 25.9% of the total cherts. In the indeterminate group, light brown dominates with 296 pieces which is 76.5% of the indeterminate group and 50.9% of the total debitage. It is possible the Indeterminate Light Brown chert is the same as the Heiner Lake Tan chert, but the tiny sizes represented in the indeterminate group negates positive identification. If these two categories are all the same material then 73% of the total debitage could be from the immediately available Southeast Range chert province. As expected, the various Cowhouse materials are not represented, which may indicate Cowhouse Creek was in a different state of flow during that time or the materials from there were not preferred.

The stone tool inventory (n=24) is dominated by utilized flakes (n=6) and edge modified pieces (n=4) with three gravers, three side scrapers, two end scrapers, one early stage biface, one middle stage biface, one late stage biface, one finished biface and two single platform cores. The relatively high frequency of scrapers and flake cutting tools indicates considerable hide-working activities, whereas four bifaces are indicative of meat cutting. Lack of projectile points may imply careful curation and recycling of these prized tools. Fifty-eight percent of the tools and cores represent the Southeast Range materials. North Fort chert includes the middle stage biface of Gray/Brown/Green, a late stage biface and utilized flake of Owl Creek Black, Cowhouse cherts include two edges modified flakes, and four are indeterminate cherts. Seven tools including two gravers, two utilized flakes, one side and end scraper, a finished biface and one core are of Heiner Lake Tan out of the Southeast Range. Five other stone tools are of Heiner Lake Translucent Brown. The Southeast Range material did dominate, with tools from of at least two other local chert sources present.

The 89 burned rocks weighed 28.7 kg with pieces averaging about 32 g. The remaining half of a semi-circular hearth (F 2) yielded 28 pieces, with 61 pieces scattered around the hearth and in the adjacent area.

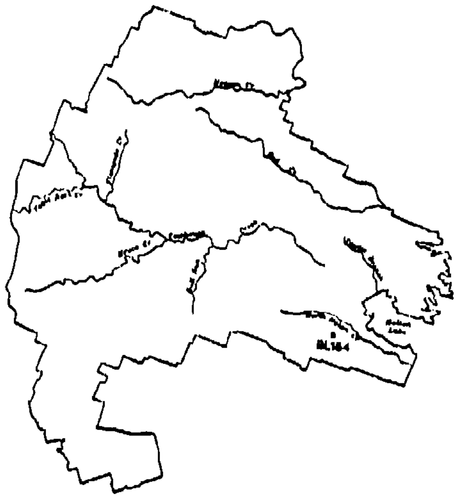


Figure 11.1 Paleoindian Site Distribution.

Although material from the Paleoindian period is limited, it does indicate that a small hearth was employed and that various activities were performed around the hearth. Tool types imply many different tasks were employed by males and females indicating a short-term camp locality.

11.1.2 Chronology and Phase Associations

A single charcoal sample (Beta-72188) from 41BL154 in TP 2, 240 to 250 cmbs out of hearth F 2 yielded a δ13C adjusted assay of 8600 BP. Diagnostic points were not associated with this hearth and therefore phase association is unclear. This one charcoal assay and by association, this occupation, falls into Prewitt's (1981b; 1985) general Paleoindian period. As Prewitt pointed out in his early work (1981b; 1985), sufficient excavation data from Central Texas was not yet available to establish solid and definable cultural phases for the Paleoindian period. Recent analyses of data from the Wilson-Leonard Site should make major contributions to defining this period. This 8600 BP age falls near the termination of the Paleoindian period and the beginning of the Early Archaic period. Without a broader assemblage and a clearer picture of the regional groups and patterns, it is unclear as to the precise placement of this event.

11.1.3 Subsistence

This one occupation yielded 64 bone fragments with 97% representing medium to large mammals plus a turtle. Deer was positively identified by 12 pieces of antler, while one large astragalus was believed to be of bison. A single fragment appeared to represent a small mammal based on the cortical wall thickness, but specific identification is not possible. Most fragments were unidentifiable as to element because of their small size. Sixteen pieces were calcined and no cut marks were observed. Only five pieces were classified as having marked weathered surfaces, possibly indicating that the dense clays (an anaerobic environment) helped preserve what bone was present. Part of the possible bison astragalus (2-154-104) was sent for C_{13}/C_{12} ratio analysis. The obtained ratio of -23.8‰ (Beta-84470) appears too light to represent a primarily C4 grazer such as bison and, thus, the result may be in error, if this specimen is actually bison. At present, this ratio is in question and should not be used for other interpretations.

Mussel shell umbos were not recovered from this occupation, but they would likely have been preserved, if they had been part of this event. Apparently mussels were not utilized by the occupants at 41BL154. Snail shells were not found in these clay loam deposits.

11.1.4 Period Trends and Observations

Paleoindian occupations are not well represented in our testing sample, with less than 1% of the 108 assignable events and about 0.4% of the total volume excavated. This is partially the result of limited visibility, possible poor bone and organic preservation, limited artifact assemblages, depth of burial, and small area excavations. This is not to say Paleoindian occupations are not present at Fort Hood, but their visibility is the key to finding and identifying them. It is encouraging that at least this limited excavation area at 41BL154 yielded a hearth with preserved charcoal which provided the one absolute age.

The Georgetown alluvium, in which these Paleoindian events occur, was infrequently recognized throughout our testing program, but thick Georgetown deposits, sometimes capped by the Royalty Paleosol, are represented in most Fort Hood valleys (Nordt 1992). The Royalty paleosol is dated in part by bulk humates to between 11,000 and 9000 BP and estimated to have terminated close to 8000 BP (Nordt 1992:69). However, this paleosol and cultural materials in that soil have often been stripped away. Paleoindian materials appear to be deeply buried, not easily recognized, with sparse cultural material compared to later cultural periods.

No new information can be to added to Nordt's (1993a) interpretation of the climate and vegetation conditions during Paleoindian times. He has postulated the C4 plant species (i.e., grasses) constituted about 65 to 70% of the total plant community. It is assumed that C3 grasses, bushes, and trees make up the remaining vegetation.

This single site with two test pits yielded only 759 pieces of Paleoindian material, with the lithic debitage accounting for 77% of all material followed by 12% burned rock. Lithic resources utilized for the production of stone tools were primarily procured from the Southeast Range chert province which surrounds this site. However, a few pieces of debitage indicate that North Fort, West Range, and Cowhouse chert provinces were known and utilized to a lesser extent. Stone tools (3% of the total assemblage), indicate meat and hide processing activities. Primary food resources appeared to include deer and possibly bison, supplemented by turtle. This occupation appears to exhibit a greater diversity in subsistence (the 64 bones represent 8% of the total material) than is normally thought of for Paleoindian groups. This apparent diversity is more in keeping with an archaic subsistence pattern. Burned rock is generally not considered part of the Paleoindian assemblage and may also support an Archaic-style occupation. The 8600 BP age may indicate how early this resource diversity was implemented in Central Texas. Group or phase association remains to be answered.

11.2 EARLY ARCHAIC

11.2.1 Cultural Assemblages

These age materials (8500 to 4600 BP; Prewitt 1985) are represented at six relatively deep terrace sites; 41BL154, 41CV174, 41CV184, 41CV481, 41CV1105, and 41CV1129, and one Paluxy site 41CV478 (Figure 11.2). These seven sites represent 5.9% of the 119 sites tested and 4.2% of the total temporal units identified from this 119 site sample and constitute about 9.5 m^3 in volume.

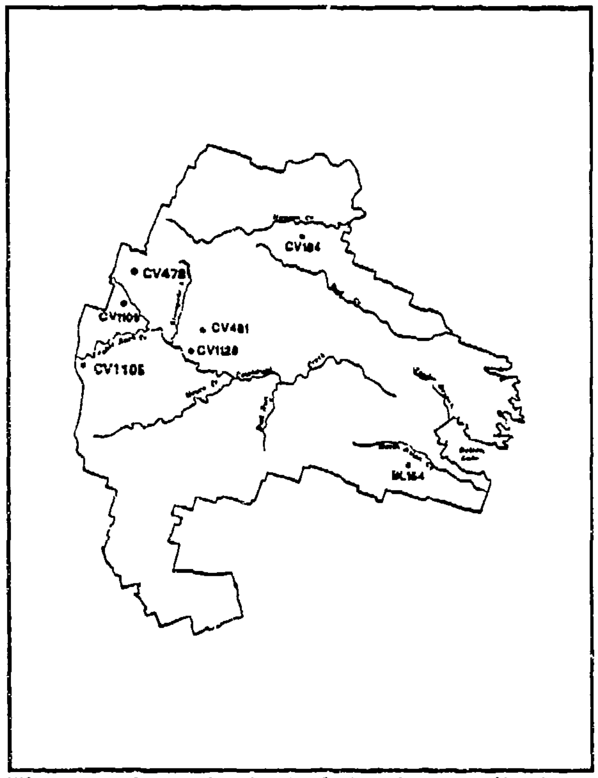


Figure 11.2 Early Archaic Site Distribution.

Test pits 2 and 4 at 41BL154, along North Nolan Creek, yielded a thick (100 to 160 cm) zone with buried occupation(s) that contained one burned rock concentration (F 3, TP 4, 125 to 137 cmbs), a Morrill, a Martindale point, and various other cultural debris. At 41CV174, along Table Rock Creek, one of seven test pits (TP 7) in a terrace yielded an 80 cm-thick occupation zone with a shallow intact basin-shaped hearth with rock fill (F 10) in a 70 cm thick burned rock midden (F 7) dated to 5240 BP. These deposits included two untypeable dart point fragments and a Wilson point associated with limited other cultural debris.

At 41CV184, along Henson Creek, two test pits exposed a thick, 90 to 180 cm zone with an intact basin hearth (F 3, 289 to 300 cmbs) dated to 6230 BP and a burned rock concentration (F 2, 180 to 220 cmbs). These two stratified features represent at least two occupations. Burned rocks dominated the recovered materials with a few flakes and even fewer stone tools and bone fragments.

At 41CV481, along Clabber Creek, TP 1 between 300 to 360 cmbs, yielded a 40 cm thick burned rock concentration (F 4) that dates to 4860 BP and was associated with an unclassifiable dart point shoulder fragment. This age was documented through identical wood charcoal and *Rabdotus* shell assays from the same provenience.

At 41CV1105, along Cowhouse Creek, TP 1, 250 to 500 cmbs revealed a thick alluvial deposit that contains at least two very sparse occupations that yielded the occasional flake, mussel shell fragments, snail shells, burned rock, and scattered charcoal flecks. At 41CV1129, along Cowhouse Creek, TP 2 yielded a flat hearth with angular rock (F 1, 100 to 110 cmbs) associated with a Barber point, less than a dozen flakes, some bone fragments, and a few burned rocks. Hearth (F 1) in TP 4, 30 to 50 cmbs and hearth (F 2) in TP 4, 70 to 80 cmbs at 41CV478 represent two vertically separated events with no associated materials other than *Rabdotus* shells. Accepted A/I ratios and three AMS assays on shells provide dates between 4620 and 5160 BP for these two stacked hearths.

These seven occupations yielded nine features, 1,493 pieces of lithic debitage, 10 projectile points, 33 stone tools, one tested cobble, 35 bone fragments, 74 mussel shell umbos, 1,534 burned rock, nine chronometric assays, very limited charcoal, and many snail shells.

Table 11.2 identifies the nine features dated to the Early Archaic. These represent seven different feature types including a 25 cm deep slab lined basin hearth, a shallow basin-shaped hearth with some rock, three burned rock concentrations, a 70 cm thick burned rock midden, a 7 cm thick hearth with angular rock, a 15 cm thick flat hearth with angular rock, and a 25 cm thick doubled slab-layered hearth. Obviously no single hearth type provided the only means of heating and or cooking throughout this long period. It is unclear if these different shaped and constructed features all served similar functions or if multiple functions were involved. In the future, detailed residue analyses on the burned rocks may enable separation of types of features for various functions (i.e., deep basins for boiling meat or bone grease, flat hearths for heating mussel shells).

The 1,493 pieces of lithic debitage include 588 pieces identifiable to a specific material type and general locations, whereas 905 (60.6%) pieces account for indeterminate material types. The high frequency of the indeterminate pieces is an outgrowth of our conservative approach in not trying to type the very tiny pieces that might lack important diagnostic criteria of different material types. About 83.6% of the identifiable types originated from the Southeast Range chert province, another 12% from North Fort Hood province, and 4.1% from Cowhouse Creek province. The high percentage from the Southeast Range is somewhat predictable as 68% of the total Early Archaic materials were recovered from 41BL154 situated in the Southeast Range chert province. Although at least three chert provinces are represented by this debitage, it appears materials from the Southeast Range were preferred and dominated. Included in the Southeast Range province cherts, the Heiner Lake Translucent Brown accounts for 32% of all debitage and 80% of the identifiable types. In the unidentifiable cherts, light brown dominates (39% of all debitage and 64% of the unidentifiable types) with a much lower occurrence of other colors. The Heiner Lake Translucent and Unidentifiable Light Brown groups may be part of the same material or from the same source area, but at present it is unclear.

The ten projectile points include four untypeable dart fragments, two Martindale, one Angostura, a Barber, a Morrill, and a "Wilson" point. Barber and Wilson point types have not been fully defined in the literature as these were not listed by Prewitt in 1981b and Turner and Hester (1993:106) mention it under the term "Early Stemmed." The "Wilson" point appears to date the earliest, possibly as early as 9000 to 10,000 BP, based on the data from the Wilson-Leonard site (Masson and Collins 1995). The Barber point, found at the Wilson-Leonard and other sites, has been assigned to the Paleoindian period by Turner and Hester (1993:79). These later two point types have just recently been discovered in good context at the Wilson-Leonard Site and this may clarify their position in time. Both point types are generally more frequent in the south central part of the state than adjacent regions (Prewitt 1995). At present, the Angostura point may be from a slightly latter period than the two previous types. Angostura points have been dated to 8805 BP at 41BX831 (Turner and Hester 1993;73), about 8700 BP the Beene Site (Thomas 1993) both in the San Antonio area and points occur in Unit I - a Paleoindian component dated between 9650 to >10,500 BP at Wilson Leonard (Masson and Collins 1995). The Morrill point (Turner and Hester 1993:160) appears to have more a northeastern dominance, whereas little is known of these types from the Central Texas region.

The 34 stone tools include eight utilized flakes, six edge modified flakes, four late stage bifaces, two middle stage bifaces, two early stage bifaces, two

Table 11.2 Features by Time Period and Type.

	Analytic Unit							
	Paleoindian	Early Archaic	Middle Archaic	Late Archaic	Late Prehistoric I	Late Prehistoric II	Mixed	Unclassified
Burned Rock Features								
midden		CV174-F6	BL154-F1; CV49-F1 CV48-F2; CV48-F3 CV97-F2; CV97-F3 CV99-F2; CV99-F3 CV117-F1; CV137-F1 CV137-F3; CV174-F1 CV403-F1; CV481-F2 CV960-F3	BL154-F1; BL339-F4 BL751-F1; BL755-F1 BL831-F1; CV44-F1 CV46-F1; CV88-F1 CV95-F8; CV97-F2 CV117-F1;CV184-F1 CV380-F1;CV389-F1 CV389-F5;CV403-F1 CV481-F1;CV587-F1 CV595-F1;CV595-F2 CV960-F4;CV1007-F1 CV1136-F2; CV1391-F1A	CV46-F1 CV47-F1 CV97-F2 CV319-F1 CV1391-F1		n=29	n=27
mound			BL233-F5; CV594-F2 CV1027-F1; CV1376-F1 CV1403-F1; CV1403-F2	BL233-F5; BL598-F1 CV1195-F1	BL233-F1 BL6708-F1	BL564-F1	n=9	n=9
concentration		BL154-F3 CV184-F2 CV481-F4	CV481-F3 CV1105-F3	CV88-F3; CV97-F14 CV174-F1; CV1038-F5 CV1136-F4; CV1472-F2	CV115-F2 CV936-F1		n=2	n=34
pavement			CV97-F3A CV97-F3B	CV97-F2B				n=1
Hearths								
basin, angular rock/ cobble layered		CV174-F10	CV389-F3; CV389-F4 CV960-F2; CV1038-F6 CV1105-F1; CV1105-F4	BL339-F4A; CV88-F2 CV95-F5; CV97-F12 CV97-F15; CV97-F7 CV98-F4; CV1129-F3 CV1200-F2; CV1471-F1	CV98-F6 CV98-F7 CV115-F1 CV317-F2 CV117-F3	CV174-F4 CV389-F2 CV918-F1 CV1038-F3	n=2	n=5
basin, little or no rock			CV97-F16 CV97-F17	CV1200-F3	BL567-F2	CV97-F4 CV97-F5 CV1085-F1		
basin, slab lined		CV184-F3	CV97-F19 CV403-F2	BL339-F2; CV174-F3 CV174-F5; CV174-F7 CV174-F8; CV1136-F5	CV1391-F2			n=1
flat, angular rock/ cobble layered	BL154-F2	CV478-F1 CV[illegible] CV1129-F1	CV97-F9 CV1136-F6	CV95-F3; CV97-F13 CV97-F9; CV98-F5 CV960-F1	BL567-F1 CV95-F4 CV317-F1 CV1166-F1			n=5
slab layered								n=2
dispersed			CV97-F10					
Other Features								
occupation zone			CV99-F1		BL844-F1			
shell lens			CV97-F2C					n=1
ash lens				CV88-F5; CV1129-F4				
burial				CV1165-F1				n=3
shell midden				BL339-F3				
ash/charcoal stain					CV97-F2A			
depression/pit							n=1	
post mold							n=1	

finished bifaces, three side scrapers, one end scraper, one Clear Fork tool, one Type A chopper, one Type B chopper, one hammerstone, one tested cobble, and one rejuvenation flake. The expedient flake tools (utilized and edge modified pieces) account for 32% of the total tools and points. Various bifaces account for another 25%, points for 23%, and scrapers for only about 1%. Scrapers appear considerably underrepresented in this Early Archaic tool assemblage, but with such small sample sizes it is unclear if this is actually a true reflection of activities. Dominant activities represented include hunting, biface production and various cutting tasks, compared to limited hide scraping and skin orientated tasks. Considering the overall low frequency of tools recovered from the Paleoindian and Early Archaic occupations, it is unclear if the Clear Fork and different choppers identified here are additions to the previous Paleoindian tool kit or a byproduct of the larger assemblage.

Material types represented by these 34 stone tools reveal 70% identifiable cherts with 71% of the latter from the Southeast Range, 17% from Cowhouse Creek, and 12% from North Fort Hood. Twenty-seven percent are indeterminate chert types and one is of quartzite. Light brown (n=4) and mottled (n=3) colors dominated the indeterminate group. The dominance of Southeastern Range cherts is similar to that represented in the lithic debitage and material types identified in the Paleoindian assemblages. Presently, the Southeastern Range chert province appears to have been the preferred material source during the early times with Heiner Lake Translucent Brown the dominant type.

The 1,659 pieces of burned rock were mostly (87%) from the eight identified features with only 224 pieces scattered outside features. The weight percentage of burned rock reveals this same distribution pattern. The average weight per piece inside features is about 0.33 kg, whereas the average weight per piece outside features is about 0.29 kg. This weight difference may indicate that the smaller rocks were no long suitable and therefore discarded.

11.2.2 Chronology and Phase Association

Twelve absolute radiocarbon dates (one sediment, three charcoal/soil, five *Rabdotus* shell, and three charcoal samples) from seven sites (41BL154, 41BL755, 41CV174, 41CV184, 41CV478, 41CV481, and 41CV1105) document this use period. The 7250 ± 50 BP (Beta-78135) assay on a *Rabdotus* shell from 41BL755 was not accepted as culturally related since the dated *Rabdotus* came from younger deposits and was not directly associated with an early occupation. Accepted assays range from 7190 to 4620 BP and are considered the latter part of the Early Archaic period. A 4860 BP *Rabdotus* snail date (Beta-84206) was identical to an AMS charcoal date of 4860 BP (Beta-83353), both from 320 to 330 cmbs at 41CV481. This indicates *Rabdotus* shells do provide acceptable ages and can be used for radiometric control of occupations if necessary. At the Paluxy site of 41CV478 three *Rabdotus* shells assays , 4620 ± 50 BP (B-88352) from F 1; 5080 ± 60 BP (B-88353) and 5160 ± 70 BP (B-88354) from F 2, are the only chronological controls for these two stacked burned rock features.

Accepted assays fall into three of Prewitt's four Early Archaic phases (San Geronimo, Jarrell, and Oakalla). Two Martindale, an Angostura, and a Morrill point from 41BL154, a Wilson point from 41CV174, and a Martindale point from 41CV184 indicate these three sites contain Jarrell phase materials. Other projected early events did not yield diagnostic points and thus could not be assigned to a specific phase. Later peoples may have collected and reused the Angostura point. The single Barber point in association with hearth F 1 (Type 1) at 41CV1129 is not part of Prewitt's central Texas sequence. The Barber point is prominent in Williams, Bexar, Gillespie, and Hamilton counties (Turner and Hester 1993:79).

Depth below surface of Early Archaic deposits in the Cowhouse valley is illustrated at 41CV1105 with a 6280 BP date from TP 1, 280 cmbs and a date of 7190 BP from 490 cmbs in this same test. This 2 m thick alluvial deposit representing a 1,000 year period indicates a gradual matrix movement and deposition (0.2 cm/yr) during this time span. This deposition rate indicates that occupations in these settings may have good context with the possibility of stratified and sealed occupations. None of our deep test pits actually reached bedrock or Pleistocene deposits indicating that earlier occupations may be present below those recovered.

11.2.3 Subsistence

The limited faunal assemblage (n=109 pieces) is dominated by mussel shell umbos (n=74) leaving only 35 bone fragments. Mussel shells are mostly unidentifiable (n=65) to species but three *Amblema* sp., three *Lampsilis* sp., two *Toxolasma* sp. and one *Quadrula* sp. are present. One site, 41CV1105, yielded over 95% of the mussel shells with no vertebrate remains. The lack of bones at this and other sites is probably the result of poor preservation and not a lack of use of these particular resources. Turtle (n=4) and, medium and or large ungulates (deer and or bison) dominate the identified pieces. Small animals such as rabbits, squirrels, canids, etc. were not represented at these seven events. Most bones are tiny unidentifiable fragments, all lack cut marks, one turtle carapace (41CV481) was burned, and only one fragment reveals marked weathering.

11.2.4 Period Trends and Observations

Seven sites contain identified Early Archaic events (about 6% of the total 108 identifiable events) but these occupations, about 2.1% of the excavated volume, yielded relatively sparse cultural materials (3,305 pieces or 351/m^3) compared to later periods. Although sparse, this is a significant increase in frequency over the earlier Paleoindian materials. However, this increase is not very significant given that six more sites yielded materials. Burned rock and lithic debitage, at 48 and 47% respectively, dominate the recovered materials. Mussel shell, stone tools, and bone account for a sparse 2.3%, 1.4%, and 1.1%. Poor site visibility, the lack of charcoal to date, and the lack of diagnostic points, may account for so few occupations identified to this period. Lack of charcoal to provide an absolute date and lack of diagnostic point in occupations kept many of the unknown occupations from being assigned, some of which may actually represent this early period.

During this period, specifically between 5000 to 6000 BP, Nordt (1993a) has postulated the C4 plants (grasses) increased to 85% to 90% of the total plant community. The middle Holocene Altithermal, or the maximum warm period reflects this general climate. Even though C4 grasses dominate the vegetation, charred wood pieces in hearths testify that trees were present. Trees may have been restricted to along water channels, hill slopes, and or in small clusters on the open uplands.

The Southeastern Range chert province provided the majority of the chert used in stone tool production. Biface manufacture appears to have dominated the tool reduction debris with a limited core and blade industry. Hunting was prevalent, with deer and bison being the primary prey, however mussels may have served as a food resource also. If not used as food, the shell itself may have been procured for use as tools or ornaments.

The occurrence of a Morrill point in this region may indicate interactions with populations further north. The possible interaction may have centered on obtaining raw chert resources. Little can be inferred from the limited artifact assemblages, and the occurrence of a single Wilson, Angostura, or Barber point. Prewitt (1985) places the Angostura point in the Early Archaic, whereas many others consider this a Paleoindian point type. Broad excavations are necessary to increase sample sizes to shed light on these point types and permit reasonable interpretations.

11.3 MIDDLE ARCHAIC

11.3.1 Cultural Assemblages

Materials associated with this period (4600 to 2250 BP; Prewitt 1985) were identified at 27 sites (see Table 11.1) and just over 6% of the excavated volume. The occupation frequency marks a substantial increase over the preceding Early Archaic period and is the second highest of all periods, with only the Late Archaic period yielding a higher number of sites. These 27 sites are widely dispersed across the fort and along 13 different creeks with a cluster of eight along Cowhouse Creek and a cluster of five along North Norman Creek (Figure 11.3). Seventy percent are deep terrace sites, two are in the upland (41CV594 and 41BL233), five are in the midslope to upland Paluxy sands (41BL532, 41BL834, 41CV403, 41CV481, and 41CV1378), and one is a rockshelter (41CV905) along Turnover Creek. Four sites (41CV594, 41CV1027, 41CV1378, and 41CV1403) in the midslope to Paluxy sands contain burned rock mounds and 41BL233 is an upland burned rock mound.

These 27 sites yielded 41 features, 11,336 pieces of debitage, 62 projectile points, 285 stone tools, seven cores, 1,495 bone fragments, 1,168 mussel shell umbos, 20,752 burned rocks, charcoal, organic remains, and many snail shells. Twenty-nine charcoal samples and six snail shells provided radiometric assays.

The 41 Middle Archaic features include 15 burned rock middens, six basin shaped hearths with rock, six burned rock mounds, two basin hearths with slabs, two hearths with angular rock, two burned rock concentrations, two burned rock pavements, two basin hearths, a dispersed hearth, a natural burned tree, a shell lens, and an occupation zone (see Table 11.2). The wide range of burned rock features in use during this period clearly suggests that burned rock played a major part of the aboriginal lifeway. The different types of hearths, burned rock piles and middens probably functioned in different processes or with different foods. More precise documentation and intensive rock analyses are required to document potential differences in actual use of feature types. Feature diversity is evident at 41CV97 with various shaped hearths that date to this time. At 41CV97, the recognition of distinctive features (burned rock pavements 3a and 3b) in burned rock midden F 3 is an intriguing phenomenon. A mussel shell lens (F 2c) is in burned rock midden F 2. These features represent separate discreet events within or on these burned rock middens and document the multipurpose and complex functions for these large middens.

Many burned rock middens date to this period and document a significant increase in their use over the one Early Archaic midden at 41CV174. New absolute ages at these tested sites document midden use starting about 4600 and continuing to at least about 3200 BP.

The recovered 11,336 pieces of lithic debitage include 4,846 pieces identifiable to specific material types with general locations at Fort Hood. The other 6,486 (57.2%) pieces account for indeterminate material types that may, but we do not known for sure, came from those same chert source areas. Again, the high frequency of the indeterminate pieces is an outgrowth of our conservative approach in not trying to type the very tiny pieces that might lack important diagnostic criteria of different known material types. About 83% of the identifiable types originated from the North Fort Hood chert province, another 6% from the Southeast Range, only about 1% from Cowhouse Creek province and less than 1% from West Range. The high percentage from the North Fort Hood Range is in sharp contrast to the Early Archaic period where the Southeast Range materials dominated the identifiable types. The Gray/Brown/Green chert from North Fort Hood Range, accounts for 50% of the identifiable cherts. Fort Hood Yellow, from this same chert province, is the second most frequent type accounting for 18% of the identifiable cherts. Owl Creek Black is the third highest, accounting for 12% of the total identifiable cherts. The highest frequency chert type from the Southeast Range is Heiner Lake Tan chert with 10% of the identifiable types and 4% of the total.

In the unidentifiable chert category, light brown again dominates (21% of all debitage and 38% of the unidentifiable types), followed by a relatively high occurrence of Indeterminate Miscellaneous chert (13% of the total and 23% of the indeterminate group). If the Indeterminate Light Brown and the Heiner Lake Translucent Brown are really the same material, then the combined group would account for another 23% of the total debitage.

The debitage assemblage is generally represented by two chert provinces - North Fort followed by Southeast Range. North Fort Range materials appear preferred and dominated by one type - Gray/Brown/Green chert (21% of the total debitage and 50% of the identifiable cherts). The lack of Cowhouse Creek cherts may imply this river valley did not function as a lithic resource area, probably because the raw materials were inaccessible or of lesser quality. Apparently, these populations did not select for tool manufacture the two known chert types from West Range. Although Indeterminate Light Brown was still very prominent in the Middle Archaic (n=2,439), as it was in the Early Archaic, the most frequent identifiable types were Gray/Brown/Green (n=2,429), Fort Hood Yellow (n=857), and Owl Creek Black (n=584). This indicates a marked contrast to the earlier period that had Heiner Lake Translucent as the dominant chert. At present, this pattern appears to reflect a cultural preference for these raw resources in the North Fort chert province.

The 62 projectile points include 14 identifiable types and a group of 19 (30.6%) unidentifiable fragments. The single most frequency type is Pedernales (n=18) with 29% of the total points followed by Bulverde (n=7) at 11.3%. Pedernales points belong to the Round Rock phase, whereas the Bulverde points belong to the earlier Marshall

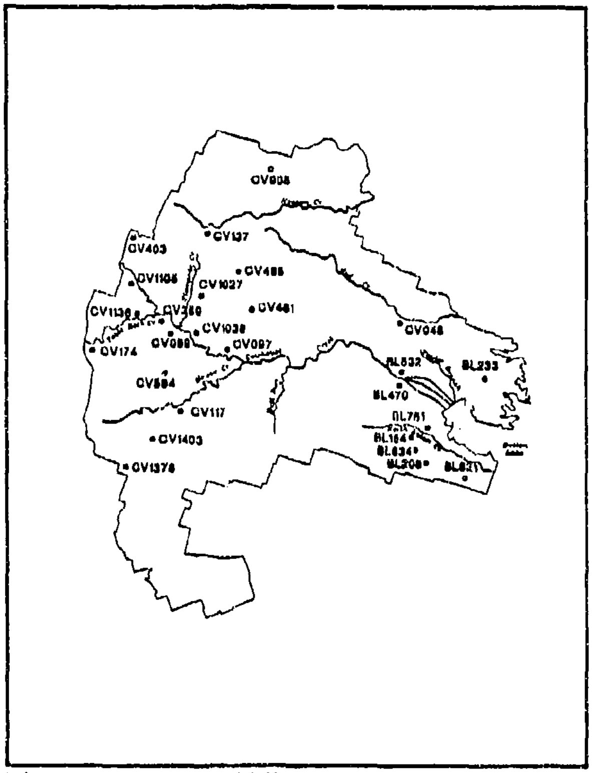


Figure 11.3 Middle Archaic Site Distribution.

Ford phase. The Clear Fork phase is poorly represented by only two Nolan and no Travis points. One Marshall and three Lange points represent the later San Marcos phase. Four Late Archaic points; two Ensor, one Castroville, and one Darl were apparently intrusive into this earlier period. One Andice tang fragment, representing the Early Archaic period, was apparently collected and curated. These Middle Archaic deposits yielded four distinctive point types; a Godley, a Morrill, two Kent and two Yarbrough, not listed by Prewitt (1981b; 1985). Hester (1993) indicated the Godley point may be younger, whereas the other point types would fit well into this period. Precise ages for these points have not been well documented. Except for the Godley, the three other types have a higher occurrence east and north of the fort (Prewitt 1995:83-174) and thus may represent something other than indigenous populations.

The 62 points types represent eight identifiable cherts and seven indeterminate material types with Heiner Lake Tan accounting for 30.6%, even though it represented only 4.2% of the lithic debitage. Gray/Brown/Green chert dominates the identifiable cherts and is represented by eight points (13% of the total). Seven points (11%) of Indeterminate Light Brown chert are the second most frequent type. One of two Nolan points was made from Anderson Mountain Gray from West Range which was very poorly represented in the debitage assemblage. Also, Cowhouse Creek material, represented by only 1.3% of the debitage, was used to make three points (one Pedernales, one Morrill, and one unidentifiable). Heiner Lake Tan chert from the Southeast Range was also selected to make points.

The 285 stone tools include 15 tool types dominated by utilized flakes (n=146) that account for 51% of the tool inventory. Lumping specific tool types into broader groups such as flake/expedient tools, formed tools, and large massive tools, a general pattern begins to appear. The flake tool types include; 146 utilized flakes, 27 edge modified flakes, eight gravers, and six spokeshaves, and account for 66% of all tools. In the formal tool group biface stages; 30 late stage, 20 middle stage, 17 finished and 12 early stage bifaces account for 28%. The large stone tools includes two hammerstones, six choppers, and three crushing/abrading stones and account for 4%. Formal end scrapers represent a mere 2.5%. The emphasis appears to be on informal or expedient flake tools that were quickly made, used, and discarded. Formal tools, such as the bifaces that require more procurement and manufacturing effort, account for less than 30% of the tools. Large implements, easily and quickly manufactured, may have influenced their frequency. When projectile points and cores are included in this group, then the percentage of formal tools - points, bifaces, and scrapers account for 42%, compared to 53% for the informal tools.

These tools were manufactured from 23 different material types, but five chert types account for 65% of the total. Gray/Brown/Green chert dominates all categories with 19%, followed by Heiner Lake Tan chert with 16%, Fort Hood Yellow with 11.6%, Indeterminate Light Brown with 11%, and Heiner Lake Translucent Brown with 8%. No apparent material type was used for a specific tool type, although three of the 11 large tools were manufactured from materials extracted from the gravels found along Cowhouse Creek. In some instances a selection process or ease of procurement may be influencing the outcome.

The stone assemblage also includes seven cores, five with multiple platforms, one single platform of Fossiliferous Pale Brown chert, and one tested cobble of Fort Hood Yellow. The multiple platform cores represent materials from Southeast Range (1 Heiner Lake Tan), North Fort Range (1 Gray/Brown/Green and 1 Fort Hood Yellow), Cowhouse (n=2), and one indeterminate. This variation indicates a broad use of material types from different regions across the fort. It is surprising that more cores were not recovered considering the high volume and accessibility of raw material at Fort Hood. This limited recovery must relate to the type of sites investigated, mostly campsites, allowing other site types -- procurement or lithic workshop areas, to contain these larger, bulkier cores. It is also possible that the aerial restricted excavations biased the collected samples.

The 20,752 pieces of burned rock (3867 kg) were mostly from 37 burned rock features (95.3%) that contained a wide range of frequencies from a low seven to a high of about 4,705 pieces in burned rock midden F 1 at 41CV174. Only 973 pieces, weighing 179.6 kg, were recovered outside defined features. Weight of individual pieces in and outside features is about 0.18 kg.

11.3.2 Chronology and Phase Association

Nineteen of the 27 Middle Archaic sites yielded 36 radiocarbon assays including six on *Rabdotus* shells (from 41BL532, 41CV1378, and 41CV1403), one on rabbit bones (41CV99), and 29 on charcoal. One of the 36 assays was actually a

640 BP date from a tiny fleck of charcoal that had filtered down into the Middle Archaic matrix in a burned rock mound (F 5) at 41BL233. The remaining 35 date⁻ range from 2210 to 4670 BP. Within this nearly 2,500 year period two gaps became apparent, a 580 year period between 2210 and 2810 BP, and a 310 year period between 3510 and 3200 BP. The first apparent gap, ignoring a natural tree burn at 2380 BP (Beta-83422) in 41CV99, falls during the latter part of the Middle Archaic period during Prewitt's San Marcos phase which is characterized by Marshall, Williams and Lange points (Prewitt 1981b). Only four (7%) of 62 points recovered from this period were assigned to these three types. Lange and Marshall points are common types in Central Texas (Prewitt 1995) and should have been well represented in these assemblages. Earlier synthesis by Prewitt (1981b; 1985) reference San Marcos phase sites in Bell and Williamson counties, thus these age sites and artifact assemblages are present in the immediate region. This gap appears to reflect sampling error.

After close examination of the chronometric data, the first time gap is not as large as first thought, as five wood charcoal dates fall into this period (2460 [Beta-75169], 2470 [Beta-74414], 2470 [Beta-75158], 2490 [Beta-83349], 2610 [Beta-74469]). However, these five assays are not associated with Middle Archaic assemblages. Four of the dates are actually associated with Late Archaic materials as the slightly older ages were interpreted as being from old wood. One 2610 BP assay, from TP 1, level 6 at 41CV1011, came from beneath cultural material in a colluvial slope context below a rockshelter. Thus, much of this apparent time gap can be accounted for, but there are still some 300 years between 2500 and 2810 BP with no dated cultural assemblages.

The 2470 BP age and associated artifacts at 41CV1007 are worthy of further discussion. Test Pit 1 went through burned rock midden F 1 and encountered a discrete occupation zone at 110 through 130 cmbs, 30 cm below the base of the midden and just below a colluvial deposit. This 20 cm thick, vertically restricted zone yielded a nearly complete Marcos (previously called a Castroville [Abbott and Trierweiler 1995:508]), a nearly complete Montell, flakes, debitage, burned rock, and charcoal. The charcoal yielded an assay of 2470 ± 60 BP (Beta-75158). This date, associated points, and other cultural material are older than Prewitt found for his Central Texas chronology framework (1981b; 1985). If the dated wood was not old wood, used 200 years later in a more recent fire, then this cultural zone provides excellent context for the association of the two point types and their approximate age.

The other three phases Prewitt (1981b) identified as Middle Archaic, the Round Rock, Marshall Ford and Clear Fork, are well represented by the obtained assays. However, the second apparent time gap, 3500 to 3200 BP falls during the Round Rock phase characterized by Pedernales points. Pedernales points are represented by 19 specimens (30.6% of the total 62 points) from these 27 sites. Bulverde points, characteristic of the Marshall Ford phase, are represented by seven specimens. Nolan and Travis points, characteristic of the Clear Fork phase, are the least represented with only two Nolan points. Preservation of charcoal could account for the discrepancy between the frequency of points and the lack of absolute dates or the limited tool assemblages may reflect the underrepresentation of specific points. Continued investigations and absolute dating are expected to fill this apparent 300 year time gap.

Recently, Johnson (1994) provided an alternative or revision to Prewitt's (1981b; 1985) division of the Middle and Late Archaic periods. The overall sequence of projectile points is not challenged, but Johnson terminates the Middle Archaic time period with the Nolan and Travis point styles at roughly 4200 BP. This revision is based on what he believes to be gross patterns of human behavior and their changes, and is suggested by Johnson to show uniformity within each period. It is beyond our purpose here to evaluate this possible revision, but the reader must consider his evidence and be open to possible changes as new data arises.

Rockshelter B, at 41CV905 in the northwestern corner of the fort, yielded a 4070 BP charcoal assay from TP 5, level 11. To date, this is the oldest known deposit at any of the rockshelters at Fort Hood (Abbott 1995:823-837).

11.3.3 Subsistence

The 1,495 bone fragments represent various taxa, with jackrabbits (n=184), cottontail rabbits (n=59), deer (n=43), turtles (n=19), raccoon (n=1), skunk (n=1), and beaver (n=1) all specifically identified. It is unclear if the latter three taxa, represented by one specimen each, served as human food resources or may have been transported into sites by non-human activity. Significantly, bison elements were not *specifically* identified, although these may be present as unrecognized fragments. Fragments we could not assign to specific taxa were assigned to various mammal size groups based mainly on the thickness of the cortical tissue. Very large (n=4), large to very large (n=256), and medium to large mammals (n=374) represent deer and bison size animals. These dominate all the other size groups. Medium size (n=6), small to medium size (n=49) including rabbit size species, and small mammals (n=4) were present in significantly fewer numbers. High frequencies of rabbits (cottontail, jack, and unidentifiable; n=470) represent 31% of all bone fragments. All but two rabbit elements came from the base of a burned rock midden (F 2) at 41CV99 and 34% of these fragments, encompassing both cottontails and jack rabbits, were burned. This high incidence of burning, overall frequency with a minimal number of ten rabbits (six *Lepus* and four *Sylvilagus*), and concentration at the base of the midden, support the inference that these rabbits were hunted, eaten, and discarded by prehistoric peoples. A 3950 BP date (Beta-84200) on six left *Lepus* sp. pelvises, skull, mandible, femur and humerus pieces (cat No. 54) defines when these rabbits were killed and indicates a Marshall Ford phase association. Although Bulverde points from this phase represent hunting activities, it is assumed that the rabbits were procured either by snares and or nets.

Only two artiodactyl specimens exhibit cut marks with one burned piece from this group. Two deer pieces were burned. Other burned species include a beaver element, 35 pieces in the large to very large mammal category, 78 pieces in the medium to large group, and 22 in the small to medium group that could be more rabbit bones. Twenty pieces of vertebra were burned. In all, nearly 22% of the bones were burned.

The 1,168 mussel shell umbos include *Amblema* sp. (n=446), *Lampsilis* sp. (n=143), *Quadrula* sp. (n=16), *Toxolasma* sp. (n=8), *Tritigonia verucosa* (n=8), *Megalonaias nervosa* (n=2), *Cyrtonaias* sp. (n=1), with 522 unidentifiable. Burned shells represent only 2.5% of the total. The relatively high frequency of mussels and the few burned shells indicate mussels probably served as a food resource. Mussels combined with the various small game of deer, rabbits, and turtles indicate a diversified subsistence base was employed during the Middle Archaic period at Fort Hood that is characteristic of the Archaic in general.

11.3.4 Period Trends and Observations

Middle Archaic deposits were recognized at 27 sites (22.7% of the total sites) and yielded some 35,105 pieces of material or 1,232 m^3. About 6.3% of the excavated volume was assigned to Middle Archaic deposits. These events contributed 36 radiocarbon assays that range from 4670 to 2210 BP and encompass three identified phases. Burned rock dominates the material remains with 59% of the total, followed by lithic debitage at 32.3%, with bone and shell accounting for 4.3% and 3.3% respectively. Recognizable stone tools (points, cores and other types) account for only 1% of the total material remains. Comparisons with the Early Archaic period are very general and should be used with caution since the sample from the earlier period is quite small and may be skewed. The overall frequency and density of the Middle Archaic assemblage are considerably higher than the earlier Early Archaic.

The frequency of burned rock has increased over the preceding Early Archaic period and is reflected in the number of burned rock middens and mounds represented here. Although the sample size of features is small from the Early and Middle Archaic periods, feature types are about the same for both periods. Burned rock middens are definitely more frequent here (n=12), than in the preceding period (n=1), but appear less frequently in the latter part of the period, during the San Marcos phase where data is sparse. Burned rock mounds first appear at this time with at least four being recognized here. Basin shaped hearths with internal rocks, flat hearths with angular rock, and burned rock in general, were present in the Early Archaic and continue during the Middle Archaic as well. Apparently, cooking and processing of resources continued in the same form, from one period to the next.

Burned rock mounds and mussel shell features were present in our Middle Archaic sample, but not in the Early Archaic. Burned rock mounds may indicate a new food processing technique or discard pattern. Mound features at Fort Hood are rarely disturbed or destroyed; therefore, this increase may be real and not caused by our sample size.

Mussel shell features in sites may reflect an expansion of the subsistence base or a new technique in the processing of these resources. Mussel shell features occur by at least the Marshall Ford phase (about 4100 to 3500 BP), as a Bulverde point was directly associated with the mussel shell lens (F 2C) in the burned rock midden (F 2) at 41CV97. Mussel shell features were not listed for this phase by Prewitt (1981b:79). However, Prewitt (1981b) did list mussel shells for the two subsequent phases, the Round Rock and San Marcos. The lens at 41CV97 may indicate their exploitation came in gradually over time.

The subsistence base appears to have been similar to the previous Early Archaic period with medium to large game - deer dominating, with rabbits added to the resource base. Because preservation plays such a significant roll in the quantity of bones recovered, it is difficult to precisely compare the older and younger bone samples. In general, the broad subsistence base detected in the Early Archaic appears to continue and expand during the Middle Archaic period. Unfortunately we detected almost no plant remains, goosefoot being the one plant represented, or plant processing tools. This lack of direct evidence makes it difficult to support a broad-based subsistence pattern.

Identifiable material types represented in the lithic debitage indicate that the North Fort chert province was the preferred lithic resource, although the Southeastern Range was used. This contrasts significantly with the Early Archaic that did not exploit this chert province. This selection may be a cultural selection factor or and may indicate that this chert province was not as accessible.

Stone tools recovered from occupations of this period are generally the same types and occur in similar percentages, as tools from the Early Archaic period. Utilized flakes show a significant increase, side scrapers slightly decrease, and gravers, spokeshaves, and a stone awl are now documented. Here, the 27 tested Middle Archaic events did not yield a single gouge and only one was extracted from the Early Archaic period events. Limited excavation areas may account for their absence, but other explanations such as site type, seasonality, or problems with tool identification may play roles. The 15 or so different tool types indicate the presence of a variety of activities. Thus, the absence of one type, the gouge, does not appear to be a function of sampling. Other tools such as the mano and metate also are absent from these assemblages, although Prewitt (1981b) indicates all four phases possess grinding implements. Questions of specific tool associations will have to await further investigations.

The overall tool assemblage appears to represent generalized camping activities at which various tools were used, resharpened, and discarded. This contrasts with specialized activity areas where one or a few tool types might occur in higher frequencies than others. For as diverse a subsistence pattern as projected and reflected in Prewitt's (1981b) Middle Archaic phases, it does not appear the tool kit reflects that diversity. Sampling may be the main cause of the restricted tool assemblage.

No burials or cemeteries such as those documented at Ernest Witte (Hall 1981) or Loma Sandia (Taylor and Highley 1995) have been identified. Our testing did not yield trade items such as non-local lithics or marine shells. One unidentifiable mussel shell in burned rock midden F 4 at 41CV48 exhibited a small drilled hole and ground and rounded edges. This piece probably served as a pendent.

One problem with the recovered data from the Middle Archaic and earlier sites, prior to about 4500 BP at Fort Hood, is poor preservation of organic materials including limited bone. This preservation factor elevates the presence of *Rabdotus* shells in these earlier deposits to a very significant level. These shells provide another material in which absolute ages may be obtained for these organically depleted occupations. Preservation of rabbit bones at about 3950 BP in 41CV99 is probably due to their rapid burial beneath the midden deposit. Even the thick cortical tissue of bison bones, if present, does not appear to have promoted preservation. 41CV1038 is the exception, with a few bison bone fragments dating to about 3000 BP and with one yielding a stable carbon isotope value of -10.2‰. This value implies the bison were feeding primarily (80%) on C4 grasses, but does not indicate the amount of C3 grasses and trees in the area. This is the oldest date on bison bones in our sample, although thick cortical bones from 41BL154 are believed to be bison at about 8600 BP.

Nordt (1993a) suggests that by 4000 BP the C4 species decreased to 65% to 70% of the total plant community at Fort Hood. This decrease in C4 grasses indicates renewed cooler and wetter conditions that remained stable at this level for around 2,000 years. Hall, (1988:203-218) using pollen data from the Fernadale bog in southeastern Oklahoma, states the period from 3700 to 1900 BP is a grassland or oak savanna with a decrease in the grasses giving way to increases in oaks and hickory trees. However, this is also about the time Dillehay (1974) demonstrated bison were present throughout Texas, from about 4500 through 2250 BP. These two data sets appear to conflict with one another, as bison are primarily C4 grass consumers which Nordt is implying are becoming less prevalent in this region. Moreover, at this time areas further north and west are in the Altithermal, a drying period between 6400 and 4500 BP (Johnson and Holliday 1987).

11.4 LATE ARCHAIC

Thirty-seven (31%) of the 119 sites contain Late Archaic events (about 2250 - 1250 BP; Prewitt 1985) which represent 34% of the 108 identified events and account for 44.5 m^3 (10% of the total) of the excavations. This is the highest frequency of all the time periods and a 8% increase in number over the previous Middle Archaic period. Late Archaic sites are widely distributed along 17 different drainages in Fort Hood (Figure 11.4) with 11 sites along Cowhouse Creek reflecting the highest density. Owl Creek, with four sites, is the second highest density, whereas other drainages exhibit less than three sites each. Only three of the 37 sites are rockshelters (41BL168, 41CV1080, and 41CV1165), whereas all others are classified as open camps. The open camps occur in upland settings (41BL233, a burned rock mound), on slopes (41BL598 and 41CV1195), seven on colluvial toeslopes, and 23 in terraces. One upland Paluxy site (41CV595) and one mostly slope/bench site (41CV1391) are included.

11.4.1 Cultural Assemblages

These events yielded over 40,500 pieces of cultural material including 61 features, 17,152 pieces of lithic debitage, 84 projectile points, 309 stone tools, 30 cores, 2,087 bone fragments, 1,339 mussel shell umbos, 19,500 burned rocks, 43 chronometric assays, and many hundreds of *Rabdotus* snail shells.

Sixty-one features were identified at 32 different sites with 41CV97 having the highest frequency - nine (15%), and 41CV174 with the second highest - five (8%). Over 58% of the sites yielded a single feature which reflect the limited area investigated during the testing phases. Identified features consist of 12 different types (see Table 11.2) including 24 burned rock middens, ten basin hearths with rock fill, six basin hearths that were slab lined, six burned rock concentrations, five flat hearths with angular rock, three burned rock mounds, two ash lenses, one burned rock pavement, one hearth stain with no rock, one mussel shell midden, one burial, and one natural burned tree stump. The various feature types identified document the diversity of activities represented. Burned rock middens continue to increase in number over the Middle Archaic period and may reflect an overall increase use in burned rock. Basin hearth features continue to increase as well, with flat rockless hearth types still the least frequent. Whatever food processing techniques were employed with burned rock in the Middle Archaic period, they continue and became more pronounced throughout the Late Archaic. Ash lens are a new feature type, but this may reflect better preservation.

The 17,152 pieces of lithic debitage represent 37 material types with 71% (n=12,158) indeterminate cherts, dominated by light brown which constitutes 25.9% of the overall total and 36% of the indeterminates. Three identifiable cherts; Fort Hood Yellow (n=1,337), Heiner Lake Translucent Brown (n=993), and Heiner Lake Tan (n=991) dominate the known types with nearly equal representation of 5%, 5.8% and 5.8% respectively. These same three cherts dominate the Middle Archaic debitage, except Gray/Brown/Green is the most prominent identified chert (22% of the total) in the Middle Archaic debitage. Chert province representation indicates that the all four known provinces were exploited with West Range and Cowhouse provinces the least utilized with 0.6 and 1.3% respectively. Southeast Range has 8.3% and North Fort has 13.6%.

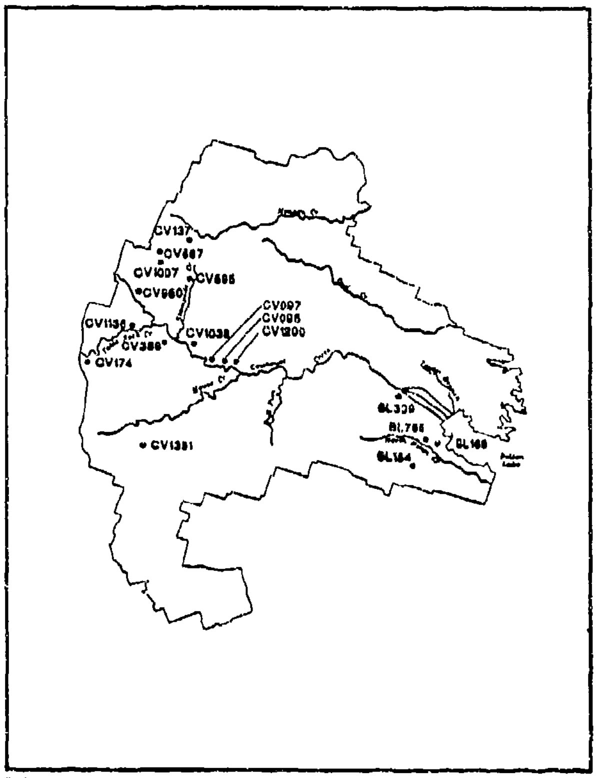


Figure 11.4 Late Archaic Site Distribution.

Non-local lithics were not recognized. Quartz and quartzite are present in very limited numbers (n=5) and are locally available in high lag gravels. The highest concentrations of Late Archaic sites is along Cowhouse Creek, but few Cowhouse cherts from the valley floor were used. Apparently, the preferred raw material sources outcrop in uplands.

Six sites (41BL755, 41BL821, 41CV44, 41CV380, 41CV389, and 41CV1007) or 16% of the Late Archaic sites yielded 48% of the total debitage, whereas 11 sites or 30% of the Late Archaic sites yielded 3.4% of the debitage. This highly skewed distribution of debitage reflects cultural activity patterns. As the sample of tested sites increases, chert provinces and individual material type frequencies may change drastically.

The 84 projectile points reflect 20 different named type categories, however seven points (four Lange, one Marshall, one Nolan, and one Pede ıles) are from the Middle Archaic period and three points (two unclassifiable arrow fragments and one Scallorn) are from the Late Prehistoric period. The seven Middle Archaic points are considered to have been collected and reused by the later groups. The three arrow points are small fragments believed to be intrusive into Late Archaic occupation zones and not a sign of totally mixed occupations. Unclassifiable dart points are the most frequent (n=20, or 23%) group of points. Of the 74 Late Archaic points, the most frequent identified point type is the Darl/Mahomet with 13 specimens (17.3%), followed by seven Castroville (9.5%), six Ensor (8%) and six Marcos points (8%). The 84 points occurred at 23 sites, or 62% of the Late Archaic sites. Five sites yielded single points, thus 49% of these age sites yielded multiple points.

Raw materials from which the 74 Late Archaic points (84 minus the 7 Middle Archaic and the 3 Late Prehistoric points) were manufactured include 16 different chert types. These are equally divided between the identifiable cherts with 52% and the indeterminate group with 48%. Heiner Lake Tan and Indeterminate Light Brown with 16 and 12% respectively, dominate these two groups. Cowhouse chert province (n=1) and West Range province (n=1) are poorly represented. North Fort (n=16) and Southeast Range (n=21) are the primary source areas for the identified raw material. This same raw material use pattern is reflected in the lithic debitage.

The 309 stone tools identified represent 20 tool types with utilized flakes accounting for 29.8%, followed by 16.8% edge modified flakes, and 13.9% late stage bifaces, with no other tool class in double digit percentages. Biface classes account for nearly 33% of the tool assemblage, various scrapers account for 9.7%, and large massive tools (choppers, hammers and crushing/abrading) account for 4.9%. The informal expedient flake tools (utilized flakes, edge modified, spokeshaves, and gravers) account for 51%. Three tools were classified as Clear Fork gouges and four drills were identified.

The 309 Late Archaic tools were from 29 different sites. Ten sites yielded five or less tools, whereas five sites (41BL154, 41BL821, 41CV44, 41CV97, and 41CV389) yielded 20 or more stone tools. Frequencies were heavily influenced by the volume of testing and the thickness of the occupation zone identified. Skewed frequencies and uneven testing hinder direct across site comparisons. Tool type and variety testifies to various camp tasks and reflect short term hunter gatherer groups.

Stone tools were manufactured from 28 different material types dominated by Heiner Lake Tan with 15.9% and Indeterminate Light Brown with 14.9%. Cowhouse chert province with 9.1% and West Range province with 1.6%, were again poorly represented. Southeast Range and North Fort Range with 26.3% and 32.6%, respectively, again dominate the known resource areas. Indeterminate materials account for 38% of the total. Tools of Heiner Lake Tan are more prevalent than the lithic debitage of this same material. This same trend in Heiner Lake Tan occurred in the Middle Archaic as well. Obviously, the formed tools were manufactured elsewhere and the finished product was transportc around before being discarded. Although Gray/Brown/Green and Fort Hood Yellow are nearly equally represented in the Late Archaic, both types were much more prominent in the tools from Middle Archaic context. Most other material categories are about equally represented in the debitage and tools. All tools were of chert except for one limestone hammer. Eight of the nine large tools were manufactured from cherts originated in the Southeast Range. This may indicate these cherts were the largest or densest raw materials available, or just a matter of convenience.

Thirty cores were identified and include 25 (85%) with multiple platforms, two single platform cores and three tested cobbles. Cores were recovered from 13 sites, but two sites - 41BL821 (n=6) and

41CV97 (n=7) yielded over 43%. Nine different raw materials are represented with 33% of Heiner Lake Tan. Southeast Range cherts account for 46.6%, followed by 26.6% from North Fort, and 20% indeterminate cherts. This lithic resource use pattern is generally the same as observed in the lithic debitage and stone tools.

Thirty-five of the 37 sites yielded about 19,500 burned rocks (3,925 kg) with five sites (41BL168, 41BL560, 41CV379, 41CV1080, and 41CV1165) providing less than 20 pieces per site. Most (87.6%) burned rocks were from the 16 burned rock features with the rest scattered outside features. Twenty-four burned rock middens and three mounds account for the bulk of burned rock. Burned rock accounts for about 48% of the total material remains identified from these age deposits. This overall frequency is the same as burned rock frequencies in the Middle Archaic period.

11.4.2 Chronology and Phase Association

Twenty-nine of the 37 Late Archaic sites yielded 43 absolute assays. However, eight assays require further explanations as they provide ages beyond the expected range for this period. First, a date of 7250 BP (Beta-78135) on a *Rabdotus* snail shell from TP 4 level 8 in a Late Archaic occupation zone at 41BL755, is interpreted to be out of context and not representative of the age of this zone. In four other instances dated charcoal appeared to old based on the associated cultural material assemblage (Edgewood, Castroville and/or Montell diagnostics) and the charcoal is considered to represent old wood. These four old wood dates include: (1) a basin hearth F 2 at 41CV88 which dated to 2660 BP (Beta-83258); (2) a burned rock hearth F 9 at 41CV97 which dated to 2900 BP (Beta-75151); (3) a burned rock midden F 2 at 41CV389 which dated to 2490 BP (Beta-83349); and (4) Level 12 of TP 1 at 41CV1007 which dated to 2470 BP (Beta-75158). These assays on old wood create the appearances of slightly older occupations than what really occurred. A tiny charcoal fragment extracted from burned rock midden F 2 at 41CV44 with a date of 930 BP (Beta-83255) is considered to have filtered down into the Late Archaic deposits from the level above and this assay does not date the occupation. Similarly, a charcoal fleck from TP 3 level 4 at 41CV46 which dated to 1010 BP (Beta-83523) appears to have filtered into an occupation zone with a Montell point and is considered intrusive. We believe that additional dates from each of these eight contexts would substantiate our conclusions.

The remaining 36 assays indicate the Late Archaic period extended from about 2230 to 1140 BP. Assays are relatively evenly distributed throughout this time range with the greatest age gap being 140 years between 1410 and 1550 BP. A single assay of 2230 BP (Tx-8417) from 41CV88 falls in the 310 year period between 2160 and 2470 BP, near the beginning of the Late Archaic period. It thus appears that cultural use occurred continuously through the Late Archaic.

The beginning of the Late Archaic is characterized by at least three diagnostic points that include the Marcos, Castroville, and Montell, and possible the Frio and Fairland points, which have been assigned to the Uvalde phase (Prewitt 1985; 1981b). This phase is represented by at least 13 and possibly 17 assays, if the old wood samples are included. Three of the old wood assays are associated with Castroville or Montell points that would fit this beginning phase. The Castroville (n=7), Montell (n=4), and Marcos (n=6) point trio accounts for 23% of the 74 Late Archaic points. Only a single Frio (41CV379, TP 4) and no Fairland points were recovered from the 119 tested sites. The near absence of the Fairland and Frio point types may indicate peoples using these styles were near their northern or eastern distribution limits (Prewitt 1995). Therefore, major camps containing a majority of Frio and Fairland point types were not in this immediate area, or that the tested site sample is skewed. If the old wood argument is not accepted for the four early dates, then at least occupational events at sites 41CV1007, TP 1 level 12 and 41CV389 TP 2 level 8, indicate the Marcos and Castroville points are some 2,000 years older than Prewitt established in 1985. These points are in apparent associated with assays of 2470 (Beta-75158) and 2490 BP (Beta-83349) respectively. The 2470 BP occupation at 41CV1007 that contained a Marcos point, has excellent context as it is vertically separated from other events, and not disturbed or mixed in any visible way.

The Twin Sisters phase, characterized by the Ensor point (Prewitt 1981b; 1985) is well represented by 13 absolute assays between 1770 and 1410 BP from 13 sites and six Ensor points from five sites (41CV44, 41CV95, 41CV97, 41CV174, and 41CV587). The best association between an Ensor point and a charcoal assay (Beta-75156) is from a basin hearth F 7 in TP 1, levels 14 and 15 at 41CV174 that date this point type to about 1650 BP. This same occupation also yielded an Edgewood point. This one assay from good context supports Prewitt's age assignment for the Ensor points (1985), but is considerably younger than the age recently postulated by Johnson (1994:5; Figure 2).

The last defined phase of this period - Driftwood - is characterized by the Darl/Mohamet points (Prewitt 1981b; 1985) and is represented in our sample by ten assays dating between 1140 and 1410 BP. The largest time gap (140 years) recognized in this sample falls at the projected break between the Twin Sisters and the Driftwood phases. We are uncertain at this time whether or not this time gap is meaningful. Thirteen Darl/Mahomet points, the most frequent point type recognized in the Late Archaic group, were from seven sites. Site 41BL755 yielded six Darl points from a 25 cm thick burned rock midden (F 1) zone buried about 25 cmbs. This discrete occupation zone contained mussel shells, charcoal, debitage, tools, and bone. Charcoal from TP 2, level 5 yielded a 1580 BP date for F 1 and presumably the associated Darl/Mahomet points. This assay is some 100 years older than Prewitt established (1985), but one may argue it might be on old wood or even predate the Darl points in this midden context.

11.4.3 Subsistence

The faunal assemblage consists of 1,343 mussel shell umbos and 2,083 bone fragments for a total assemblage of 3,426 pieces. The bone fragments represent numerous taxon, including: deer (n=42), turtles (n=18), antelope (n=3), jackrabbits (n=1), cottontail rabbits (n=3), raccoon (n=1), skunk (n=1), beaver (n=1), rat (n=1), canid (n=2), bird (n=2), and fish (n=2). The limited number of identifiable specimens in nearly all taxon create uncertainty to the idea these all represent human food resources. Many of these animals may have served as human food resources, but many could have been transported to sites by non-human activity. Deer were definitely present (4.4%), but bison elements were not specifically identified. Long bone fragments with cortical wall thickness of bison bones were assigned to "very large" (n=13), "large to very large" (n=450), and "medium to large" (n=984) mammal size group. These likely represent deer and bison size animals, and dominate (69.5%) all the other size groups. Bison is probably the species represented in the "very large" and "large to very large" mammal class and we therefore assume it to be represented in this assemblage. "Medium" size (n=15), "small to medium" size (n=21) including rabbit size species, and "small" mammals (n=3) are in significantly fewer numbers. The low frequencies of rabbit elements (cottontail, jack, and unidentifiable; n=8, <1% of Late Archaic bones) is a significant decease from the Middle Archaic period that has 31% rabbit size bones. Turtles, deer and bison were consistently used for food resources.

Burned fragments represent 13% of the faunal assemblage including 0.7% of the umbos and 21.4% of the bones. Nearly all bones representing small non-ungulate taxon were not burned, supporting the interpretation that these do not represent resources utilized by humans. Seven deer elements (16.6%) and five turtle elements (27%) were burned, but the bulk of the burned fragments was unidentifiable to species. Medium to large size fragments evidenced the highest burned counts with 45%, followed by large to very large fragments with 34%, and general vertebra with 7%.

Cut marks on bones, definite indicators of human use, were nearly absent, with only two cut pieces identified. One piece is of an unidentified artiodactyl and the other is a medium to large size mammal fragment. Cut marks were also nearly absent on the Middle Archaic assemblage.

The faunal assemblage reveals mussels, turtles, and large game animals, most notably deer and bison, served as the principle food resources during the Late Archaic. *Amblema* sp. dominate the identified mussel species and account for 38% of the total shell assemblage. Most umbos (45%) could not be identified and thus specie representation is uncertain. Generally the faunal discard was not systematic in its pattern of association, as remains were uncovered in association with small burned rock features, large midden deposits, and away from identified features. Here again, plant remains were very sparse with one carbonized lily bulb and a hickory nut being identified. It is anticipated that, even though not well represented, plants played a major role in the subsistence base. Although the animal resources were procured, dismembered, and defleshed, very few bones displayed cut marks and only 13% were burned. Burning may have occurred through disposal by discarding directly into fires and not form cooking activities.

The site distribution of faunal remains reveals only eight (41BL339, 41BL755, 41CV44, 41CV88, 41CV9?, 41CV174, 41CV389, and 41CV1007) of the 30 faunal-yielding sites yielded more than 100 pieces and only 41BL339 yielded over 1,000 specimens (30% of the total). Shell umbos dominate the faunal assemblage from 41BL339 with 85% of the faunal remains from a single shell midden. These eight sites yielded over 80% of the total faunal assemblage. The non-random nature of the distribution again testifies to and may also be influenced by seasonal and or activity area. At this time preservation does not appear to be a significant factor.

In Late Archaic sites, mussel shell umbos were most frequent (50%) in a single mussel shell feature, that at 41BL339, followed by nearly 25% from burned rock middens and another 25% from outside features altogether. Bones were most often associated with burned rock middens (49%), with 38% not associated with any feature at all, leaving roughly 13% associated with non-midden features. Middens with their relatively poor overall context yielded 40% of the faunal assemblage which makes direct association with other objects and dates uncertain. The 60% bone assemblage outside middens is nearly equally spilt between associations with other features and general scatter.

11.4.4 Period Trends and Observations

Late Archaic deposits were recognized at 37 sites (31% of the total sites) and represented by 40,500 pieces of material (about 1?% of the total recovered remains). About 10% of the testing volume represents Late Archaic deposits and documents 908 items per m³. These deposits yielded 43 radiometric assays with 36 assays establishing a time range from 2230 to 1140 BP for this period that encompass three identified cultural phases. Burned rock dominates the cultural material remains with 48% of the total assemblage, followed by lithic debitage at 42%, bone and shell accounting for 5.2% and 3.3% respectively. Recognizable stone tools (points, cores, and other tools) account for only 1% of the total assemblage. Burned rock frequency shows a slight decrease from the preceding Middle Archaic period, although the frequency of burned rock features, including middens and mounds has increased. The significant change in general categories appears in the percentage of debitage which increased about 10% from the preceding Middle Archaic period. In comparing the Middle Archaic to the Late Archaic, it is important to consider that the Middle Archaic period includes roughly 2,500 years, whereas the Late Archaic spans less than half that, and was only about 1,000 years long.

Sixty-one features are assigned to the Late Archaic period. This is a slight increase over the number identified in the Middle Archaic period, which may be accounted for by the slight increase in Late Archaic sites. Feature types are the same as in the previous Middle Archaic with ash lens now present or better preserved so they are now recognized. The actual number of burned rock middens increased over the Middle Archaic, but the percentage of this type to other features is nearly the same. As in the Middle Archaic, recognizable burned rock features were discovered in or on burned rock middens in at least two instances (midden F 4 at 41BL339 and midden F 2 at 41CV97). Basin hearths still dominate over the flat cobble or slab type hearths. Cooking and processing food in burned rock features continued relatively unchanged through the Late Archaic period.

The subsistence base appears to have been roughly similar to the previous Early and Middle Archaic periods with medium to large game, deer and possibly bison dominating, supplemented by a few turtles and mussels. Plant resources are thought to have been utilized but direct evidence is minimal. The rabbit consumption documented in the Middle Archaic is not evident in these Late Archaic sites. Preservation, although a possible factor in early periods, is not a hindrance at this time. Apparently Cowhouse Creek contained the bulk of the mussels with *Amblema* sp. and *Lampsilis* sp. dominating, as the shell midden in the Late Archaic (F 3 at 41BL339) and the shell lens in the Middle Archaic (F 2C at 41CV97) were adjacent to this creek. Dillehay (1974:180-196) demonstrated bison were present throughout Texas, from about 4500 through 2250 BP, near the beginning part of the Late Archaic. With bison size bone fragments identified in the Late Archaic assemblages, it is anticipated that most of these relate to the beginning part of this period, the Uvalde phase. Broad subsistence pattern established earlier in the Archaic, appears to continue during the Late Archaic period with bison decreasing in the later part.

Stone tool types and their general frequencies detected in the Late Archaic are roughly the same as in the preceding Middle Archaic. The Late Archaic reveals a slight decrease in the percentages of utilized flakes and slight increases in the percentages of points, scrapers, cores, and drills. Important is the absence of manos and metates during a time with a generalize, broad based subsistence pattern that was thought to include various plants. It may be that wooden mortars and pestles were used in place of stone implements or that the limited area investigated skewed our recovery. Gouges, generally noted in the Archaic period, are represented by three specimens and reflect minimal increase over the absence of gouges in the Middle Archaic assemblages.

Raw material types and source areas identified in the Late Archaic have not changed significantly from the previous period, with one exception. That is, the decrease in the frequency of Gray/Brown/Green chert to about 6% here, from the Middle Archaic in which it was one of the two dominant identified cherts with nearly 20% of the total. The two prominent sources areas are North Fort chert province with 13.6% of the overall debitage category and 46.9% of the identifiable materials and Southeast Range with 13.5% of all the debitage and 46.5% of the identifiable materials. The indeterminate chert materials dominate with 71% of the total debitage from this period and Indeterminate Light Brown continues to be the most dominant type. Materials from outside Fort Hood - Leona Park chert, are limited in quantity (n=2). This use pattern is similar to the Middle Archaic population with the exception that Gray/Brown/Green chert from North Fort has decreased considerably. The use of only local sources may imply a limited range in seasonal movements and or trade networks.

Raw materials used to produce stone tools are relative similar to materials used in the Middle Archaic with a major decrease in the use of

Gray/Brown/Green chert from North Fort province. Material types and sources appear the same, but the percentages of specific chert types have changed slightly.

Charcoal is better preserved than in the proceeding Middle Archaic and allows for more identification of the wood burned and organic matter. At least nine different tree species have been identified in this period including the rare maple. A burned lily family bulb and a burned hickory nut were identified and indicate at least two plant resources used. These last two species, plus the maple, cottonwood, sycamore, and hackberry trees are all species not identified in the earlier Middle Archaic.

The two oldest assays for this period, 2470 (Beta 75158) and 2490 BP (Beta-83349) are associated with Marcos and Castroville points of the Uvalde phase and are 3,000 to 4,000 years younger than Johnson (1994) has recently postulated for these point types in this same region, whether or not old wood affected these assays. The five other Marcos points from four different sites (41BL755, 41CV95, 41CV495, and 41CV1038) are from sites that did not yield Castroville points. All four Montell points were also from sites (41CV46, 41CV595, and 41CV1007) that did not yield Castroville points with only one Montell point associated with a Marcos point (41CV1007). Montell associated assays of 2470 BP from a midden at 41CV1007 and 1720 BP from a midden at 41CV44 are from questionable context, and thereby do indicate a clear time range for this point type. The non-associated point types from specific context supports the idea of separate groups using the same area at about the same time.

During the Twin Sisters phase, the Ensors (n=6) slightly outnumber the Edgewood points (n=5). Edgewood points, not identified by Prewitt (1981b; 1985) or Johnson (1994) as part of the Central Texas sequence, were in direct association with Ensor points at Fs 14 and 15, TP 10 level 27 at 41CV97 and F 7 TP 1 level 14 and 15 at 41CV174. An Edgewood point at 41CV88 was not with other points, but was associated with a circular basin hearth that dated to 2660 BP (Beta-83258). However, this assay was thought to be on old wood and not truly a reflection of the age of this occupation or point type. One other Edgewood point was at 41CV960, in a burned rock midden deposit with a Godley, Castroville, two unidentified dart points, and an Ellis (another type not identified by Prewitt 1981b; 1985 or Johnson 1994 as part of the Central Texas sequence). Two levels below the midden yielded a chunk of charcoal dated to 1690 (Beta-70037). This later date indicates that the Edgewood type is about the same time as the Ensor. Edgewood and Ellis point types appear throughout Central Texas as depicted by Prewitt's recent distribution maps (1995). If the 1650 BP date from F 7 at 41CV174 is accepted, then the age of the Ensor points are some 400 years younger than Johnson (1994) had indicated.

Broad trade networks reflected by elaborate bone ornaments, decorated coastal shells, etc., and burial costumes in adjacent regions during this period (Hall 1981; Lukowski 1988; Bement 1991; Huebner and Comuzzie 1992) are not visible from our testing data. A burned rock midden F 1 at 41CV1007 yielded one polished shell pendent fragment. These age deposits did not yielded non-local lithic material. That is not to say that the various local, high quality Fort Hood cherts were not moved or traded out from this central resource position to populations in relatively poor lithic resource areas to the north, east, and south. A single burial, F 1 in TP 1 at 41CV1165, does document single bodies were deposited in non-cemetery settings.

The apparent limited use of rockshelters at Fort Hood and possibly in previous periods, may be directly linked to the scouring of sediment from these shelters (Abbott and Trierweiler 1995; Chapter 7.0 in this volume). If this scouring event occurred, then few if any Late Archaic age deposits will have remained. Consequently, we will not be able to directly state that they did or did not use these settings.

Nordt (1993a) suggests the 9 m thick West Range alluvium was undergoing aggregation from about 4200 BP to about 600 BP or throughout much of the Middle and all of the Late Archaic cultural periods. Three organic humate samples from West Range alluvium in Cowhouse Creek and a sample from Owl Creek were analyzed for their carbon isotope values and revealed no discernible shift in vegetation from the proceeding period, between 2000 and 600 BP (Nordt 1993a). Throughout this nearly 3600 year long period of deposition, the carbon isotope signatures indicate mixed assemblages of C3 and C4 species with a slight increase in C4 plants around 2000 BP. Nordt (1993a:20, 64) believes this latter increase indicates a brief drying and warming episode just before or around 2000 BP. Lateral channel migration occurred around 2380 BP. Hall (1988:206), in synthesizing the Central Osage Plains in Oklahoma and in evaluating the southern Great Plains in 1990, states that beginning about 2000 BP the climate changed, resulting in a period of comparatively moist climate that lasted about a 1,000 years. This led to increased ground cover and higher alluvial water tables that probably supported permanent stream flow in most valleys. His interpretation comes from a diverse data set including pollen, molluscan studies, alluvial geomorphology, soils, and vertebrate faunal materials. The alluvial geomorphology record includes over thickened, organic-rich A horizon soil up to 1 m thick and generally buried by more than a meter of alluvium. This soil named the Copan paleosol in northeastern Oklahoma (Hall 1977) dates to about 1800 to 1000 BP. An identical paleosol, the Caddo paleosol (Ferring 1986), dating to the same time, lies in southwestern Oklahoma. Similar thick paleosols have not been identified at Fort Hood, although a thin paleosol in West Range alluvium along Owl Creek dates to 2130 BP (humate assay, Beta-38178).

11.5 LATE PREHISTORIC I

The Late Prehistoric I period (about 1250-650 BP; Prewitt 1985) is represented at 23 sites (19.3%) with those sites nearly equally divided between open camps (n=13) and rockshelters (n=10). Sites are dispersed along 13 different creek valleys with the highest frequency (n=6) along Cowhouse Creek (Figure 11.5). Besides ten upland rockshelters, two other sites (41BL233 and 41BL608, both burned rock mounds) are in the uplands, three (41CV47, 41CV98, and 41CV936) on colluvial toeslopes, and eight in terraces. This distribution indicates various site types are represented and various landforms were occupied during this period. In contrast to pervious periods, none of the three sites on the toeslopes were burned rock midden sites.

11.5.1 Cultural Assemblage

These events yielded 26,274 pieces of cultural material including 22 features, 13,107 pieces of lithic debitage, 88 projectile points, 185 stone tools, 2091 pieces of bone, 250 mussel shell umbos, 10,553 burned rocks, many snail shells, charcoal, and 31 absolute assays.

The 22 features were identified at 15 sites, with three different features at 41CV317. Basin hearths with rock were the most frequent type (n=6), followed by burned rock middens (n=5), flat hearths with angular rock (n=3), and other types with fewer than two examples. No new feature types were recognized. As we saw in the previous Late Archaic period, a burned rock midden (F 2 at 41CV97) also included a distinct and recognizable feature (here, an ash/charcoal stain) embedded within it.

The 13,107 pieces of lithic debitage account for 50% of the Late Prehistoric I material remains. These represent 35 material types with 24 identifiable and 11 indeterminate types accounting for 22 and 78% respectively. Indeterminate Light Brown chert dominates all categories with 30% of the total, followed by Indeterminate Miscellaneous chert with nearly 17%, and all other types accounting for less than 10% of the total. The most frequent identifiable material is Fort Hood Yellow with 7.7% of the total, followed by Heiner

Lake Tan with 3.6%, and other identifiable types with less than 3%.

The 2,801 pieces of identifiable cherts represent all four general source areas, but not in equal amounts. North Fort province is represented by nearly 56% of the identified cherts with 38% from Southeast Range, Cowhouse has 5.5%, and West Range is poorly represented by only 1%. Even though North Fort province has the highest frequency recognized, it only accounts for about 12% of the total lithic material recovered. Obviously, two chert provinces were preferred even though the other two were known and just as accessible.

Each of the 23 sites yielded debitage, but in vastly different frequencies. Nine sites (39%) yielded less than 100 pieces, two of which (41BL233 and 41BL608) are mound sites and three others (41CV46, 41CV319, and 41CV1391) are midden sites. This limited distribution of material in these burned rock features may indicate their minimal use during this particular period. Four sites (41BL844, 41CV115, 41CV317, and 41CV935) yielded between 1,200 and 3,000 pieces per site with three (41BL844, 41CV115, and 41CV935) being rockshelters. These high densities reflect intensive occupations in these confined settings.

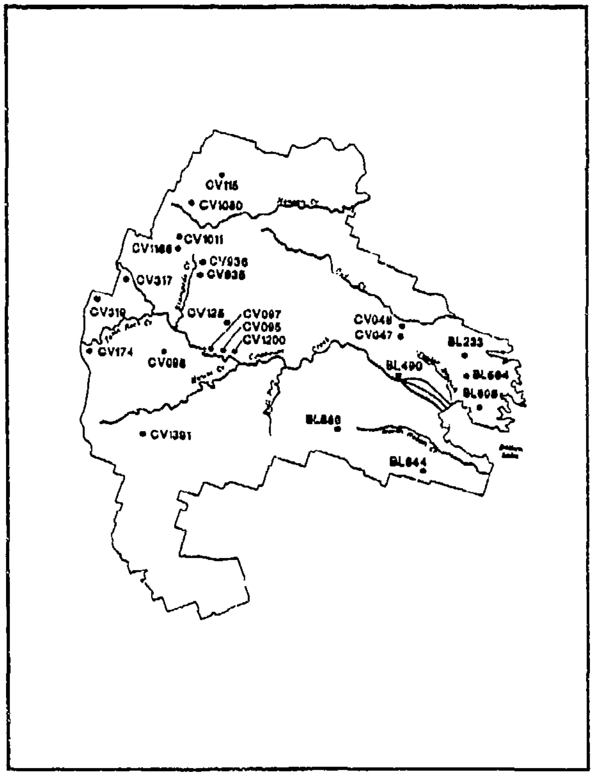


Figure 11.5 Late Prehistoric I Site Distribution.

The 88 projectile points from context assigned to this period are not all arrow points. Eighteen dart points and fragments (3 Darl, 1 Castroville, 1 Marcos, 2 Uvalde, and 11 unidentifiable fragments) represent about 20% of the collection. These dart points are not believed to be indications of mixed components, but items collected and reused by later groups. It is still possible some may indicate mixed deposits, but further excavations will have to demonstrate this. Of the 70 arrow points and preforms, 41% are classified as Scalloms, 37% are unclassified arrow point fragments, and 8.5% are Fresno's. These three point types represent 87% of the arrow points. Other identifiable types include two Bonham's, one Starr, and one Young. Scallorn points and Grandbury preforms are the key index markers for this period and the Austin phase (Prewitt 1981b; 1985). The Young, Fresno, and Starr points are not as well defined in time and may be part of other groups, or more common outside the Central Texas region.

The 70 arrow points are again dominated (81%) by indeterminate cherts with Indeterminate Light Brown having the highest frequency (35% of the indeterminates). In identifiable cherts, Heiner Lake Tan (n=6) is the prominent chert type, followed by two pieces of Fort Hood Yellow, two Gray/Brown/Green, two of Owl Creek Black, and one of Fort Hood Gray. Material types represented by the arrow points are in different percentages than represented in the debitage percentages. This indicates the points were probably make at other localities and brought to these sites as finished tools.

The 88 projectile points were recovered from 17 of the 23 sites. Six sites (41BL233, 41CV47, 41CV95, 41CV125, 41CV174, and 41CV1391) yielded only one point each, while four sites (41BL567, 41BL844, 41CV97, and 41CV317) yielded ten or more points. The remaining seven sites yielded two to eight points each. Very few points came from burned rock mounds and middens, although two midden sites, 41CV47 and 41CV1391, each yielded one point and midden F 2 at 41CV97 yielded multiple arrow points. Three types of sites did not yield a single point.

The 185 stone tools include 19 general types dominated by 61 utilized flakes, followed by 38 edge modified pieces, 27 late stage bifaces, 14 finished bifaces 11 middle stage bifaces with other tool types represented by less than seven specimens each. Flake tools, including utilized, edge modified, spokeshaves, gravers, and denticulates, account for 58% of the tools recovered. Scrapers account for 5.9%, bifaces for 30.3%, and large tools (choppers, hammerstones and crushing/abrading tools) for 4.3%. A single gouge and a single drill were present, both from rockshelter 41CV1080. Although scraping activities may be represented in the informal flake tools, the formal scrapers are very infrequent and may reflect limited hide processing in this area.

These 185 stone tools document use of nearly equal amounts of identified (47%) and indeterminate chert types (52%). Heiner Lake Tan of the Southeast Range dominates the identifiable cherts with 33%, whereas Indeterminate Light Brown chert dominates with 31% of the other. Fort Hood Yellow from North Fort Range with 12.5% is the only other prominent identifiable type. Fifteen pieces represent Cowhouse chert province and account for 17% of the identifiable cherts, but West Range is not represented. The two hammerstones are made of quartzite. Four of 10 scrapers and 31 of the 56 biface are of identifiable cherts indicating a possible preference for certain material types to manufacture certain formal tools.

Tools were dispersed over 18 of the 23 sites, but seven sites (41BL504, 41BL844, 41CV97, 41CV115, 41CV317, 41CV935, and 41CV1011) yielded 74% of the tools. Much of the unevenness can be attributed to the limited test excavations, but some appear to reflect cultural activities around small features or discard into large middens.

Burned rock accounts for over 40% of the Late Prehistoric I material remains with 85% from identified burned rock mound and midden features. Test pits in the two mounds (41BL233 and 41BL608) yielded an average of 2668 pieces, whereas test pits in five middens (41CV46, 41CV47, 41CV97, 41CV319, and 41CV1391) yielded an average of 717 pieces. Other features were much smaller and yielded relatively few burned rocks in comparison to the mounds and middens. Only 7.3% (n=769) of the burned rocks were outside definable features. Two mounds (41BL233, 41BL608) and a midden (41CV1391) together yielded 76.4% of all burned rock with considerable range between sites and events depending on the size of burned rock features.

11.5.2 Chronology and Phase Association

Eighteen sites yielded 31 radiocarbon assays on charcoal from context associated with this Late Prehistoric I period. However, a single date of 1940 BP from a basin hearth (F 3) in stratified context in TP 5 at 41CV317 appears too old. This assay is considered to have been on old wood as a second assay of 1190 BP came from five levels below and documents Late Prehistoric I period occupations below this dated feature. The remaining 30 assays indicate a time range from 680 to 1300 BP with Prewitt's (1981b) key index marker, the Scallorn point, dominating the recovered points during this period. The fewest dates fall into the hundred year period from 1100 to 1200 BP with only one date (1190 BP, from 41CV317).

Four individual charcoal assays, 680, 680, 870, and 890 BP from 10 to 20 cmbs through 40 to 50 cmbs document the use of burned rock mound F 1 at 41BL233. Three different charcoal assays of 700, 990, and 1030 BP from three separate burned rock middens at 41CV47, 41CV319, and 41CV1391 indicate use of these features during that time. When Prewitt published his Central Texas sequence (1981b) he did not identify burned rock mound or middens as key index markers for this period. This, and other recent evidence (see Treece et al. 1993, Quigg and Ellis 1994), document burned rock midden use throughout this period.

In four instances, one or more Scallorn points were directly associated with four different charcoal dates at sites 41BL504, 41BL567, 41CV115, and 41CV935. Late Prehistoric I occupations at 41BL504 also yielded a Fresno and a untypeable dart point, an occupation at 41BL567 yielded a Darl and untyped dart point, and occupations at 41CV935 yielded one Bonham point. Apparent associations between Scallorn arrow points and dart points indicate the Scallorn-using populations collected earlier dart points and reused them or possibly still used darts on some occasions. This action complicates interpretations of some occupations where the sample size is small and undated. This reuse of earlier points creates the appearance of mixed occupations.

11.5.3 Subsistence

The 23 sites documented to the Late Prehistoric I period yielded 2091 bone fragments, 250 mussel shell umbos and two plant parts. Most bone fragments (80%) could only be identified as indeterminate or long bone pieces and assigned to general mammal size categories, leaving a small percentage to try and identify to element and taxon. Taxon and species identified include rabbits (n=36), deer (n=31), turtles (n=28), birds (n=18), opossum (n=16), armadillo (n=7), snakes (n=6), canid (n=3), gophers (n=3), rats (n=3), fish (n=3), bos/bison (n=2), skunk (n=1) and raccoon (n=1). Tremendous diversity is exhibited through this sample, but it remains uncertain if all these served as human food resources, especially when frequencies are extremely low. Comparatively higher counts for rabbits, deer, and turtles imply these species were the principle food resources. Bison is definitely very poorly represented, if these two specimens even represent bison. Armadillo came into this region during historic times and is believed to be intrusive. Single bone fragments of opossum and armadillo are burned. In total 825 pieces (39.5%) are burned with the majority falling in the large to very large size class (n=267), the medium to large size class (n=227), as well high counts (n=142) in the general vertebra. Rabbits (n=3), deer (n=4), turtle (n=6), skunk (n=1), canid (n=1), and birds (n=3) all have burned elements identified. No cut marks were recorded on any elements.

The 250 mussel shell umbos were dominated by *Lampsilis* sp. with 54% of the total, followed by unidentifiable umbos at 29%, and *Amblema* sp. at 9%, and *Cyrtonaias* sp. (n=3), *Toxolasma* sp. (n=8), *Tritigonia* sp. (n=7) minimally represented. Only six specimens were burned and none showed evidence of intentional modification.

The plants represented include a walnut and a unidentified carbonized seed. Again, it is anticipated that plants utilization was much greater than this meager sample indicates.

This faunal assemblage was recovered from 20 of the 23 sites with six sites (41BL844, 41CV97, 41CV115, 41CV319, 41CV935, and 41CV1080) yielding greater than 200 pieces per site. Fourteen sites yielded less than 100 pieces each. Four of the six most productive sites (41BL844, 41CV115, 41CV935, and 41CV1080) are rockshelters that may preserve bones better and/or may accumulate more bones from non-human activities.

About 67% of the faunal assemblage was not directly associated with identified features. Burned rock middens at 41CV47 and 41CV97 account for 12.6% and basin hearths with rock at 41BL567, 41CV115 and 41CV317 account for 11.8%. Flat hearths with angular rock and burned rock mounds yielded the fewest number of faunal remains.

11.5.4 Period Trends and Observations

Based on 31 charcoal assays from 23 sites, our Late Prehistoric I sample dates between about 680 and 1300 BP. However, the volume of tested matrix (15.7 m^3) is only about a third of the preceding Late Archaic period and merely 3.5% of the total tested volume. It should be noted that a high percentage of Late Prehistoric I materials are considered mixed as indicated by the high number of Scallorn points in the mixed assemblage (see 11.7 below). These events yielded 26,274 pieces of cultural material and indicate over 1.7 times higher density (1,674 per m^3) than was documented for the Late Archaic.

This short 600 year period appears to represents a single phase - Austin (Prewitt 1981b; 1985). Comparisons to the earlier 1,000 year long Late Archaic period (which incorporates at least three identified phases) may or may not be appropriate or valid. Here, we make general comparisons with this word of caution. The Late Prehistoric I assemblage is dominated by lithic debitage accounting for nearly 50%, whereas burned rock accounts for 40%, and all tools for only 1%. The high frequency of debitage reflects an 8% increase over the Late Archaic period. The bone percentage has also increased, with a decrease in mussel shell and burned rock percentages. The tool frequency (1% of the total assemblage) remained constant. Recognizable features (n=22) dropped considerably from the Late Archaic (n=60). Burned rock middens are drastically reduced as they account for about 22% of the features here, verses some 40% in the Late Archaic. This probably reflects directly on the decrease in overall frequency of the burned rock from one period to the next.

This period reflects the first widespread use of the new bow and arrow technology, although no other major changes are observed in the cultural assemblage. This new weaponry system appears adapted into the existing system, to hunt the same game as previously. The documented subsistence was again mostly deer size animals supplemented by small game such as rabbits and turtles, with a minor contribution by mussels. Bison, if present, appear minimally represented. The food processing tool kit appears similar to previous periods, with flake tools still dominating and bifaces still prevalent. Plant processing, if conducted with stone tools, is not reflected by the presence of manos or metates. These are not represented here and were not in the Late Archaic.

The raw material use pattern is similar to the Late Archaic period with the intense use of indeterminate chert materials that are dominated by Indeterminate Light Brown chert, followed by Indeterminate Miscellaneous chert. The significantly less frequent identifiable cherts reveal Fort Hood Yellow chert from North Fort province with the highest frequency of debitage. Lower, but similar frequencies of Heiner Lake Tan, Heiner Lake Translucent Brown, Heiner Lake Blue all from Southeast Range and similar amounts of Gray/Brown/Green chert from North Fort. For the most part, this same material use pattern is present in the stone tool assemblage, with one major exception in that Heiner Lake Tan is the most used identifiable chert. This is the same identifiable type that dominates in the Late Archaic period.

In summarizing the Late Prehistoric I period, little change is apparent in the tool assemblage, raw material use pattern, or subsistence resources except for less frequent use of mussels, in comparison to the earlier Late Archaic. The major change is in the introduction of a new point type, the Scallorn, which was employed with the new delivery system, the bow and arrow technology. The hafting technique employed here, the small corner-notching is a major deviation from the preceding Driftwood phase that saw a straight stem hafting technique employed. The relatively high use of rockshelters at Fort Hood (also noted by Prewitt 1981b) appears as a continuation from the middle of the Late Archaic. However, geomorphic processes played a significant part in not allowing all the Late Archaic deposits to be preserved in these rockshelters to evaluate their use throughout time. As indicated in Chapter 10.0, the radiocarbon dates indicate shelter occupations persisted from the middle of the Late Archaic on. Shelter use during the Late Prehistoric I may be linked to protection from other groups in the area as Scallorn points were used to kill others such as those at Loeve-Fox (Prewitt 1982).

As in the previous Late Archaic period, no signs of elaborate trade networks involving marine shell ornaments, non-local lithic materials, or social customs similar to the mortuary practices documented at Loeve-Fox (Prewitt 1982) are apparent. Although marine shell ornaments have not been documented, two *Rabdotus* shells with tiny drilled holes in them (see Figure 6.14.8) were recovered at 41CV935, a small rockshelter with shallow deposits. These were found in the same level with Scallorn points and a charcoal date of 780 BP.

This Late Prehistoric I period occurs during the last 600 to 700 years of the West Range alluvium (about 4300 to 600 BP), the major depositional unit identified at Fort Hood by Nordt (1992). This depositional unit lacks distinguishable paleosols and had a moderate depositional rate that should provide vertically separated occupations, if they are present. The most recent (last 2000 years) or upper part of West Range alluvium is missing from most of House, North Nolan, and the upper Hensen Creek basins. Therefore, Late Prehistoric I occupations will not be found in these settings. Nordt (1993a) interprets the general vegetation throughout this period to be similar to today's, a nearly equal mix of C3 and C4 plants. This interpretation is based in part on a 890 BP humate assay with a δ13C value of -18.4‰ from Owl Creek and a 1250 BP humate assay of δ13C value of -19.1‰ from Table Rock Creek (Nordt 1993). Identified trees during this period include juniper (41CV44 - midden F 1), a Leguminous type (41CV44 - midden F 1), walnut (41BL567), American Sycamore (41BL754), elm (41CV317 and 41CV97), live oak (41CV1136), and white oak (41BL504, 41BL844, 41CV115, and 41CV1080).

11.6 LATE PREHISTORIC II

Late Prehistoric II age deposits (about 650-200 BP; Prewitt 1985) occur at 14 sites (11.8%) in our sample. Five are rockshelters, two are on colluvial toeslopes, and seven are in terrace settings. These sites are widely dispersed along eight different streams with three along Cowhouse and Oak Creeks, two along Table and Henson Creeks, and one each along Taylor, North Nolan, Shoal and Two Year Old Creek (Figure 11.6).

11.6.1 Cultural Assemblage

These identified events yielded 19,822 pieces of cultural material from 11.4 m^3 (1,739 per m^3) or 2.6% of the total volume excavated. Material categories represented include eight features, 3,688 pieces of lithic debitage, 25 points, 54 tools, four cores, three ceramic sherds, 1,061 bone fragments, 16 mussel shell umbos, 14,965 pieces of burned rock, charcoal, snail shells, and nine radiometric assays.

Seven sites yielded eight features that were categorized as a burned rock mound and seven basin hearths. The mound was on a T_2 surface and not in an upland setting as earlier mounds have been. Five of the seven basin hearths were in terraces with one on a toeslope and one in a rockshelter. One basin hearth at 41CV1085 and two hearths at 41CV97 lack rock, whereas the other four basins contained angular rocks. Burned rock middens are noticeably absent from these deposits, however, these age middens may be in with the mixed deposits (see Section 11.7).

The 3,688 pieces of debitage represent 18.6% of the Late Prehistoric II material remains and include 26 different cherts and one quartz. Seventeen identified chert types account for 26.4% and are dominated by Fort Hood Yellow (16.9% of the total and 64% of the known sources), whereas other identifiable cherts are represented by less than 5%. Nine indeterminate chert types are dominated by Indeterminate Light Brown (40% of the total and 55% of the indeterminates) with the only other double digit percentage represented, is Indeterminate Dark Gray with 12% of the total and 16% of the indeterminates. Even though many color combinations are recognized, the two dominant cherts were selected over the others.

The four known Fort Hood source areas are represented by 973 pieces of identifiable chert. North Fort chert province is clearly the dominant source with 69%. This is followed by Southeast Range with 26%, then Cowhouse with 32%, and West Range is minimally represented by 2%. The prominence of one source would imply a preference for this material.

Debitage was recovered from all 14 sites except 41CV164, where four levels from TP 1 were assigned to this period. Site 41CV115 (40.7%) and 41BL754 (25%) yielded 65.7% of the total, with four sites (41BL773, 41BL886, 41CV97, and 41CV1085) accounting for 28.2%, leaving seven sites contributing only 6.1%. These uneven distributions can be misleading. Events with the fewest pieces are generally represented by thin (3 to 4 levels) occupations from one TP, which are interpreted as good to excellent context. By contrast, the site with the highest frequency (41CV115) is a shallow rockshelter with a Late Prehistoric I occupation immediately under the Late Prehistoric II and may have some mixing problems. This rockshelter also had the majority (82%) of the Fort Hood Yellow chert and may skewed overall representation of this chert; only one other site (41CV1085) has Fort Hood Yellow as the dominant chert. Two other sites, 41BL923 and 41CV1085 with higher counts, 923 and 328 respectively, are also rockshelters without other identified components. Therefore these limited space rockshelters reflect higher densities of material than the open air campsites.

The 25 projectile points include 12 unclassifiable arrow point fragments, five Perdiz (41BL754, 41BL773, 41CV115, 41CV1038, and 41CV1085), three Bonham (41BL754, 41BL773, and 41CV174), two Bulbar stemmed (41BL886 and 41BL888), one Sabinal (41BL754), a dart

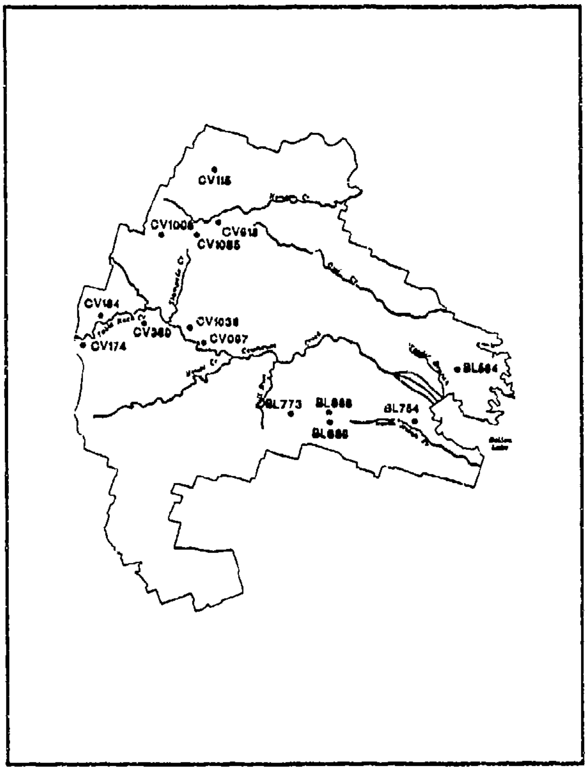


Figure 11.6 Late Prehistoric II Site Distribution.

fragment, and an unknown piece. Differences between the four named types are in the shape of the stems with no side notched forms present. Perdiz is the key point type for the Central Texas Toyah phase (Prewitt 1981b; 1985) and has a broad distribution across much of Texas (Prewitt 1995). Sabinal points are mostly in the southern Edwards Plateau (Turner and Hester 1993) and Lower Pecos region (Prewitt 1995:128). Bulbar stemmed points are mostly along the south and Central Texas coast (Turner and Hester 1993:203). Bonham points are primarily in the northeast and in other regions but their presence here is unclear. All these points, except the Perdiz, may indicate population movements, trade, or something unrelated. The dart point appears to have been a collected and recycled point as it was recovered with a Perdiz and an arrow point fragment.

The projectile points are all of chert with nearly equal and dominant representation by Heiner Lake

Tan (n=8) and Indeterminate Light Brown (n=7). Seven other chert types; three Indeterminate Light Gray, two Fort Hood Yellow, a Gray/Brown/Green, an Owl Creek Black, an Indeterminate Light Gray, an Indeterminate Miscellaneous, and an Indeterminate Mottled are represented. Debitage is dominated by nearly 75% indeterminate chert types, but cherts used to manufacture points are nearly equally split between the identifiable and non-identifiable types. Southeast Range chert (Heiner Lake Tan, n=8) is twice as frequent as the North Fort Range cherts which dominated the debitage.

The dominance of Heiner Lake Tan and Indeterminate Light Brown is not just reflected at a single site, as points of these types were collected from five separate sites indicating more than just convenience in their selection. Nine sites yielded these 25 points, with 41BL754 and 41CV1085 yielding five each, 41BL886 with four, 41BL773 with three, and another six sites each yielding two or less. In two of three instances the Bonham points were with Perdiz points. Only 41CV174 yielded a single Bonham without other point types in association. Bulbar stemmed points were not associated with other identifiable arrow points. At 41BL888, a Bulbar stem point was the only point recovered, whereas this type was with unidentifiable arrow point fragments at 41BL886.

Fifty-four stone tools are assigned to this period and include 20 utilized flakes, 11 late stage bifaces, eight edge modified flakes, four drills, four side scrapers, three gravers, two finished bifaces, one end scraper, and one middle stage biface. These nine tool types reflect some activity diversity, but three classes; utilized flakes, late stage bifaces, and edge modified flakes, account for over 72% of this tool assemblage. Flake tools (utilized, edge modified, and gravers) account for 57%, followed by bifaces at 26% and scrapers at 9%. No large tools such as manos, choppers, hammerstones, etc. were identified. The majority of debitage reflects the biface production.

The 54 stone tools represent 17 material types with 31 (59%) identifiable to sources. Heiner Lake Tan is most often represented with 18.5% of the total, followed by Indeterminate Light Brown with 16.7%, then Fort Hood Yellow with 11.1%, and others cherts accounting for less than 10% of the total. As in the material represented by the points, Heiner Lake Tan is more dominant than the Fort Hood Yellow which was dominant in the debitage assemblage. Six of 14 bifaces are of identifiable cherts with three of Gray/Brown/Green, two of Heiner Lake Translucent Brown and one of Fort Hood Yellow. Eight indeterminate cherts were manufactured of four Indeterminate Light Browns, two Indeterminate Mottled, and one each of Indeterminate Light Gray and Indeterminate Dark Brown. No one chert type was apparently selected for a specific tool type.

Stone tools were recovered from 11 of 14 sites with 41BL754 yielding 13 (24%), 41CV1085 yielding 12 (22%), and 41CV115 yielding 9 (16.7%). All three sites are rockshelters were the occupation area is restricted and resulted in higher artifact density. These three rockshelters account for 63% of the tool assemblage leaving eight other sites with only 37% or 20 tools. Large open terrace sites yielded fewer tools per unit and a much lower density than most rockshelters.

Four chert cores were identified, one each from 41BL754, 41BL886, 41BL888, and 41CV115. The one from 41BL754 is a single platform, whereas the others are multiple platform. All four are indeterminate chert types with two light browns, a white and a miscellaneous.

Three Leon Plain body sherds were recovered from Late Prehistoric II context at 41CV174. Each sherd has 23% to 43% quartz and 38% to 47% bone additives and are identical in paste to other sherds linked to the Toyah phase (Reese-Taylor 1995). An AMS assay on charcoal adhering to one sherd from BT 5 yielded a δ13C (-27.4‰) adjusted age of 180 ± 60 BP (Beta-70658). The sherds at 41CV174 confirm a Toyah phase assignment, but their scant nature here and across

Fort Hood implies some underlying cultural processes that require further explanation.

11.6.2 Chronology and Phase Association

Eight sites yielded nine radiometric assays dating to this 600 year long Late Prehistoric II period, with eight on charcoal and one (41BL754) on a *Rabdotus* snail (CB-506). Assays range from 200 BP back through 820 BP with the oldest date being from the snail. Without this snail assay, the time ranges back to 690 BP at 41CV97 and at 41BL564. Five charcoal assays were directly associated with features, a burned rock mound F 1 at 41BL564, a basin hearth F 4 at 41CV97, a basin hearth F 4 at 41CV174, a basin hearth F 1 at 41CV918, and a basin hearth F 3 at 41CV1038. At 41CV389 the charcoal came from outside, but immediately adjacent to a basin hearth with angular rock F 2. The undisturbed burned rock mound at 41BL564 appears to have been only used during this period as revealed by the 200 BP date from the bottom of the feature at level 8. The next deeper level yielded a date of 690 BP.

In only two instances, open camp 41CV1038 and rockshelter 41CV1085, were charcoal assays directly associated with diagnostic projectile points. In both instances a Perdiz point and an untypeable arrow fragment were present with dates of 360 and 380 BP respectively. These dates correspond to the timing of Prewitt's Toyah phase where the Perdiz point is the key index marker. Unfortunately, no dates are available to establish the precise age of the three Bonham points or the one Sabinal point. These deposits appear primarily associated with the Toyah phase, but four non-Perdiz points possibly reflect interactions with other groups. The 200 year old burned rock mound at 41BL564 establishes the occurrence of mounds during this period and completes the time continuum for this feature type throughout the last 5,000 years.

11.6.3 Subsistence

Late Prehistoric II events at 14 sites yielded 1,061 bone fragments, only 16 mussel shell umbos and plant remains. Most bones (93%) could not be identified to a specific species, with 43% in a "medium to large" mammal category, another 10% in the "large to very large" mammal group, and 25% in a general category of vertebrae remains. The 7% that could be identified to species included bison (n=16), turtle (n=4), deer (n=2), jackrabbit (n=1), cottontail (n=4), rat (n=7), opossum (n=8), raccoon (n=1), and a drum (n=2). With deer and bison positively identified, it appears these two species provided the majority of the food resources. These were undoubtedly supplemented by the smaller species, if any, but it is unclear which of the identified species actually served as human resources. Many species may have been brought into sites by non-human activity. A relatively high 23% of the elements are burned, but most are unidentifiable pieces in the medium to large mammal class (n=79 or 33% of burned pieces), general vertebrae (n=79 or 33%), small to medium mammals (n=66 or 27%), or large to very large (n=11 or 4.5%). Identified species with burned fragments include bison, rabbit, and turtle supporting their use by humans. Only three bones revealed cut marks, and they were on medium to very large mammal fragments.

The 16 umbos were mostly unclassifiable (81%) with *Lampsilis* sp. and *Quadrula* sp. identified. No shells were burned or revealed any human modification. These 16 umbos came from five sites with no more than six (41BL888) at any one site. Their overall low frequency and dispersed nature in sites creates some uncertainty about their role in the human subsistence.

Again, plant parts were not identified in these age deposits. It is unclear how important plants were in the subsistence.

Three of 13 faunal productive sites yielded nearly 65% of this faunal assemblage with open camp 41CV174 yielding the most (n=318), followed by rockshelter 41CV115 with 213, and open camp 41CV1038 with 166 pieces. The opossum, drum, rat, and other small to medium rodents were from rockshelters 41BL754 and 41BL886 and may not reflect human food resources. The burned rock mound at 41BL564 was the only site not to yield any bone, whereas shelter 41CV1085 yielded one umbo and open camp 41CV389 yielded six pieces. The basin hearth with no rock at 41CV97 and the basin hearth with rock at 41CV1038 yielded 27 and 149 pieces respectively. Nearly 83% of the bones and umbos were not directly associated with identified features.

11.6.4 Period Trends and Observations

Our sample of Late Prehistoric II events dates between about 200 and 820 BP, based on eight charcoal and one *Rabdotus* snail assays from 21 sites. The volume of tested matrix (11.4 m^3) is about two thirds of the preceding Late Prehistoric I period and only 2.6% of the total tested volume. These 21 events yielded 19,816 pieces of cultural material indicating about the same high density per volume as the Late Prehistoric I period and much higher than the Late and Middle Archaic periods.

These 600 years appear to represent only the Toyah phase (Prewitt 1981b; 1985) as did the proceeding Austin phase in the Late Prehistoric I period. The time interval represented for each period is about the same and thus facilitates direct comparisons. The Late Prehistoric II assemblage is dominated by burned rock with just over 75% of the total items. Burned rock is followed by the lithic debitage at 18.6%, bone at 5.4%, and mussel shell umbos and stone tools each represented by less than 1%. The percentage of burned rock increased significantly from the Austin phase with major percentage decreases in all other categories. The shell umbos almost became non-existent and may reflect either a change in overall resource utilization or a decrease in their availability. One new artifact class - ceramic sherds - was detected, but in very limited numbers. Even through this is the most recent period and preservation should not be a problem, bone frequency decreased to less than half that of the Austin phase. Recognized features also dropped, from 22 in the Austin to the eight in the Toyah phase. The number of occupations in rockshelters dropped from ten (43%) to five (36%) of the total Late Prehistoric II occupations.

The Late Prehistoric II saw the addition of another technological change, that being the production of ceramic vessels. While this new cooking process could have reduced the need for burned rock, specifically in the stone boiling process, the high percentage of burned rock documented during this period negates this assumption. Even though the new ceramic technology was added, it was probably not fully integrated, as is evidenced by the very few sherds (n=3) associated with this period. Adding the sherds from mixed context to those here, still limits the total to less than 100 pieces.

The fragmented vertebrate faunal assemblage hampered identification of the species utilized during this period. Medium to very large mammals - deer and bison size, dominate the identifiable pieces, but most fragments could not be identified. Small game was represented, but in very limited numbers and these may not have served as human food resources. Use of mussels appear very limited and may be a seasonal resource. This same overall subsistence pattern existed in the earlier Austin phase, except for the identification of a few bison fragments.

Features used to cook or process food resources have not significantly changed. A burned rock mound, not listed as a key index marker by Prewitt (1981b; 1985), has been identified to this period. This maintains the continuation of mounds throughout the last 5,000 years. Basin hearths, some with rock and some without rock, are the only other features represented at this time. The limited variation in feature types is probably a result of our samples size.

The pattern of lithic resource use is quite similar to the previous Austin phase as reflected in the high frequency of Fort Hood Yellow (17% of the total debitage) as the dominant identifiable chert and Indeterminate Light Brown chert which dominates (40%) all types. The 83 stone tools were manufactured using similar lithic types to that of the previous period. Heiner Lake Tan dominates the identifiable cherts and Indeterminate Light Brown dominates the other group. Non-local materials such as obsidian, alibates, etc. were absent from this 3,688 piece debitage assemblage.

Ceramic technology was introduced during this period, but does not appear to have altered the stone tool assemblage. Projectile points and utilized flakes account for the majority of tools, whereas other tool types show similar percentages to Late Prehistoric I. Here again, manos, [illegible]ates and other tools assumed to reflect plant processing are absent. Even though the Toyah phase is known for its bison hunting, the stone tool assemblage lacked large choppers, hammerstones and pounders and revealed a limited number of scraping tools, all thought to be necessary in the processing activities. Hunting large game was performed by the bow and arrow. This Perdiz arrow point with its tapered stem reflects a new socked hafting technique not previously detected. This may reflect another new invention or a new group with a different background moving into the region.

Summing up the Late Prehistoric II period, little change is observed from the preceding period in regards to the overall tools types, lithic use pattern, or subsistence resources. Exceptions being the addition of bison and the decline of mussels to the subsistence base. Apparently, this subsistence change had little direct affect on the tool assemblage. New are the introduction of ceramic vessels and a new point hafting technique on the arrow shaft. However, the addition of pottery to the existing cooking technology does not appear to have reduced the need or use of burned rock, which accounts for 75% of the cultural assemblage, or about twice as much as the Late Prehistoric I assemblage. Some tool types known elsewhere for this period (such as beveled knives, Cliffton points, large end scrapers, and bone tools) are absent, and the near absence of pottery may be significant.

Frequent use of rockshelters at Fort Hood during the Austin phase slightly decreased during this period. However, the shallow and slowly aggrading deposits in rockshelters hamper the isolation of single events and contribute to creating palimpsest assemblages. Disturbances in these settings can easily mix materials from numerous events and different time periods hindering their usefulness.

Signs of social interactions and or trade networks involving marine shells, non-local lithic materials, or specialized mortuary practices as those documented at Loeve-Fox (Prewitt 1982) are not recognized. Again this is probably a reflection of sample size and not a cultural pattern.

The major depositional unit - the Ford alluvium, during the last 800 years, indicates rapid sediment accumulation in the valleys, thereby creating vertical separation of cultural deposits if and when present (Nordt 1992). These alluvial deposits provide a better opportunity over the rockshelters deposits to locate single events and investigate specific cultural patterns.

Vegetation during this period included various tree species such as elm (41CV918), maple (41CV918), willow (41BL773), oak (41CV379 and 41CV389), and hickory (41CV174). Tree species identified in earlier periods such as juniper and pecan were probably still present, but the few identified samples have not revealed all tree species growing at this time. Of these identified species, willow and hickory had not been previously identified.

11.7 MIXED ASSEMBLAGES

The 119 tested sites at Fort Hood include 59 (49%) sites with at least one and often multiple components (see Table 11.1) assigned to mixed time periods. These cultural deposits could not be separated into specific, individual temporal components. Mixed deposits were in 26 terrace sites, 15 in shelters, 14 on slopes, and four in the uplands. As might be expected about 42% are sites with easily observed, surface expressions of midden and mound deposits. In middens, vandalism has affected anywhere from 10 to 110 cm of the deposits with some mixing easily detected, whereas other deposits appear undisturbed. In the slowly aggraded and shallow deposits of rockshelters the top 10 to 20 cm are nearly all disrupted and mixed. Terraces with cultural material near the surface have the top 10 to 20 cm disturbed through various activities. Subsurface mixing of components appears quite limited or often not detectable because time related artifacts or radiometric dates are unavailable.

Cultural material from disturbed areas is considerable with 93 identified features, 45,343 pieces of debitage, 980 stone tools, nine ceramic sherds, 3,450 bone fragments, 326 shells and 29,554 burned rocks. As indicated by 11 of the 23 radiometric assays from these deposits, most mixed material represents the last 1,000 years with another 30% of the assays encompassing the previous 1,000 year period. Disturbance to the most recent deposits was expected given the proximity of younger deposits to the present surface in rockshelters and the middens. In both these latter settings the lower parts of the rockshelters and middens often contain some intact deposits.

Arrow points account for 48% of the point assemblage (n=202), and include 20% Scallorn, 16% unidentified arrow fragments, 2% Perdiz, and 5% Bonham points. Unidentifiable dart fragments account for nearly 17% of the total, and Pedernales points at 7%, are the most prominent identifiable dart and twice as frequent as any other dart point type.

Lithic debitage is again dominated by indeterminate cherts that account for 70%. Indeterminate Light Brown is most frequent and accounts for 25%. In the identifiable cherts Heiner Lake Tan is most frequent, followed by Heiner Lake Brown, Fort Hood Yellow, Owl Creek Black, and Gray/Brown/Green at nearly equal amounts. One piece of obsidian (41CV137 - TP 1 - Level 7) was identified in with materials of the Middle and Late Archaic periods. This piece was traced to the Malad source in Idaho (Asaro and Stross 1995:H-1). Other than this obsidian piece, no other non-local raw materials were identified in the mixed assemblages.

Nine ceramic sherds (41CV48 - TP 2 - levels 3 through 6) were recovered from apparent mixed context. However, ceramic sherds are known to have been produced only during the Late Prehistoric II period, and thus represent material from that time. Sherds include one burnished body fragment from a jar/olla and eight small brushed body sherds. Brushed sherds reveal nearly identical paste and additive frequencies, with additives including quartz, hematite, sedimentary rock fragments, bone and grog. Additives in the brushed group are dominated (59%) by grog, whereas the burnished sherd is dominated (50%) by bone, and both sherd groups reveal large quantities of quartz, 35% and 42% respectively. These two apparent vessel groups were probably manufactured by different groups of people that originated from different areas using different additives based on cultural patterns.

In summary, the mixed deposits appear primarily to result from surface disturbances and vandalism in rockshelters and the extensive vandalism of middens exposed at or near the surface. Open terrace sites reveal very minor subsurface disturbance or mixing of culturally defined deposits.

11.8 UNCLASSIFIED ASSEMBLAGES

Portions of 99 sites have at least one area with material that is unclassifiable as to a particular time period. These levels and components account for nearly 65% of the total tested volume. Presently, these levels exhibit various and diverse cultural materials, and most lack diagnostics and or datable organic material to determine their age. Often they are below or above dated components.

In many of the latter instances, these unclassified materials may be part of identified components and represent slightly displaced materials, but uncertainty exists as to their true association. Further investigations may enable assignment of unclassifiable levels, in contrast to the mixed levels. Sites containing these levels include 75 open camps and 22 rockshelters, and are distributed across the landscape. Two sites are in upland settings, 15 on colluvial slopes, and 80 are in terraces.

The unclassified cultural materials include 158 features, 9,974 pieces of debitage, 35 projectile points, 313 other stone tools, 18 cores, 976 mussel shells, 1,860 bone fragments, and 22,031 burned rocks. The large number of feature reflects midden and mound deposits that lack clear evidence of a particular age. While these features generally have some levels assigned to a particular time period, much of the midden or mound could not be confidently assigned. The fact that many middens and mounds are represented accounts for the high frequency of burned rock, much of which comes from these features. In the projectile point category, 57% (n=20) are unclassifiable to a particular type, and are therefore, little use in assigning ages. Even typed points in questionable associations or context make temporal assignment uncertain. Twelve identified dart points date to the Archaic, including two Early Archaic, five Middle Archaic and five Late Archaic types. As shown previously, the Middle and Late Archaic periods are well represented and these points could indicate more of these aged components

The 313 stone tools (1% of this assemblage) reveal similar types and frequencies as observed in the six temporal periods. Various flake tools account for 64%, followed by bifaces at 26.5%. Scrapers (n=14) are more frequent compared to frequencies in the various time periods. The high frequency of tools is again related to their occurrence in burned rock midden deposits.

Lithic debitage reveals indeterminate chert types again dominate with 71%. In the indeterminate g   , Indeterminate Light Brown dominates with 3 % of all debitage or 46% of this group. In the iden ified chert types, Fort Hood Yellow accounts for nearly 9% of all debitage and 30% of this group. It is nearly twice as frequent as any other identified chert type. This frequency contrasts sharply with the lithic debitage in mixed assemblages which reveal Heiner Lake Tan as the dominant identified chert. Non-local materials are again absent from this unclassified assemblage and therefore, their frequency is quite similar to the six time periods and the mixed assemblages.

These unclassified materials represent 15% of the total material recovered from about 65% of the tested volume. However, there is every reason to believe that further investigations may yield the necessary data to allow assignment of many of these areas to particular time periods.

11.9 RESEARCH DESIGN ISSUES

As we have discussed previously (Chapter 4.0), our testing phase was designed to address site significance and eligibility under Section 106 for nomination to the National Register of Historic Places. Consequently, site integrity and data *potential* were the focus of our investigations; we did not attempt the recovery of substantive scientific data which to address specific research design issues. In determining site eligibility, recovered data and observed data sets were evaluated and assessed on their ability to *potentially* address specific research issues. Although the data sets we obtained are small and restricted to a few general categories, we nonetheless see this accumulated data as providing some important initial information with which to address and open discussion on some broad research issues. Clearly, specific research issues can best be addressed through data recovery excavations, and no one site will provide all the answers. Below, we advance some tentative statements on four of the major topics in the Fort Hood research design.

11.9.1 Chronological Research Issues

The 199 absolute assays coupled with the 561 projectile points obtained from 119 tested sites, and the five depositional units help document the timing of prehistoric activities at Fort Hood. Occupations began at least by 8600 BP and continued sporadically throughout prehistoric times. The general Central Texas chronological framework established by Prewitt in 1981b and 1985 appears to be valid. Minor time gaps of less than 300 years observed in the chronometric assay results of uncalibrated dates prior to 5000 BP (Figure 11.7) appear to be more or less a reflection of sampling and not a result of specific settlement patterns. Cultural activities occurred during all three broad prehistoric periods; Paleoindian, Archaic and Neo-Archaic/Late Prehistoric. The Paleoindian period at Fort Hood, pre-8600 BP, is nearly non-visible except for a few projectile points collected from the surface. The assays indicate the Middle Archaic, Late Archaic, and Late Prehistoric I periods have nearly the same number of assays per period (although the former encompasses nearly four times the span of time). The fewer assays in the Early Archaic period are probably not solely a reflection of the number of occupations, but a combination of factors including organic preservation, more deeply buried components, and our inability to identify these early events.

In trying to identify and date early occupations we were hampered by the lack of organic material in deposits dating earlier than about 5000 BP. Many deeply buried burned rock features and occupation zones in early Holocene deposits lack charcoal. However, our investigations into the suitability of the abundant *Rabdotus* snail shells to help provide relative and absolute ages has furnished some hope for alternatives. The A/I ratios and the direct AMS dating of individual shells appear quite promising in providing relatively accurate ages. If these techniques continue to yield acceptable ages, then *Rabdotus* shells will provide an opportunity to date previously undatable early occupations.

One example of the positive correlation between AMS dating *Rabdotus* shell and charcoal assays is the results we obtained from TP 1 at 41CV481. This deep terrace site, with well-stratified cultural deposits, includes a buried intact midden (F 2) at about 220 cmbs, associated with a Nolan point and an intact midden (F 4) at 340 cmbs. A charcoal sample from Feature 2 at 220 cmbs provided a δ13C adjusted age of 3940 ± 220 BP (Beta-83425), compared to an AMS *Rabdotus* shell (CD-119) with a δ13C adjusted age of 4380 ± 60 BP (Beta-84205) from level 210 cmbs. Feature 4 yielded a δ13C adjusted charcoal age of 4860 ± 50 BP (Beta-83353) and a *Rabdotus* shell (CD-133) with a δ13C adjusted assay of 4860 ± 60 BP (Beta-84206). These two paired charcoal and *Rabdotus* shell assays in good stratigraphic context provide positive, direct evidence that *Rabdotus* can be used to date early events that lack charcoal.

Temporal refinement of Prewitt's chronological framework was limited and may require multiple assays on any given component, as "old wood" is postulated to have been burned at a number of sites here. Many associations between points and chronometric dates are from midden deposits and are not considered the best context because of probable internal movements within these features (see Quigg and Ellis 1994).

Another limiting factor has been the dating of intact features without associated projectile points. Consequently, good context between recognizable projectile point types and associated charcoal assays has been quite limited. This has minimized refinement of the chronological framework. One possible shift detected in the framework is in the age of the Marcos and Montell points. These points were associated with a date of 2470 BP from an isolated 20 cm thick occupations zone buried 90 to 140 cmbs at 41CV1007. In a second example involving a Marcos point, a charcoal date of 2460 BP was obtained from an isolated, 50 cm thick zone, buried 150 to 200 cmbs at 41BL755, in TP 4. These two assays (if "old wood" was not used) reflect about a 220 year earlier age for the Marcos point type than suggested by Prewitt

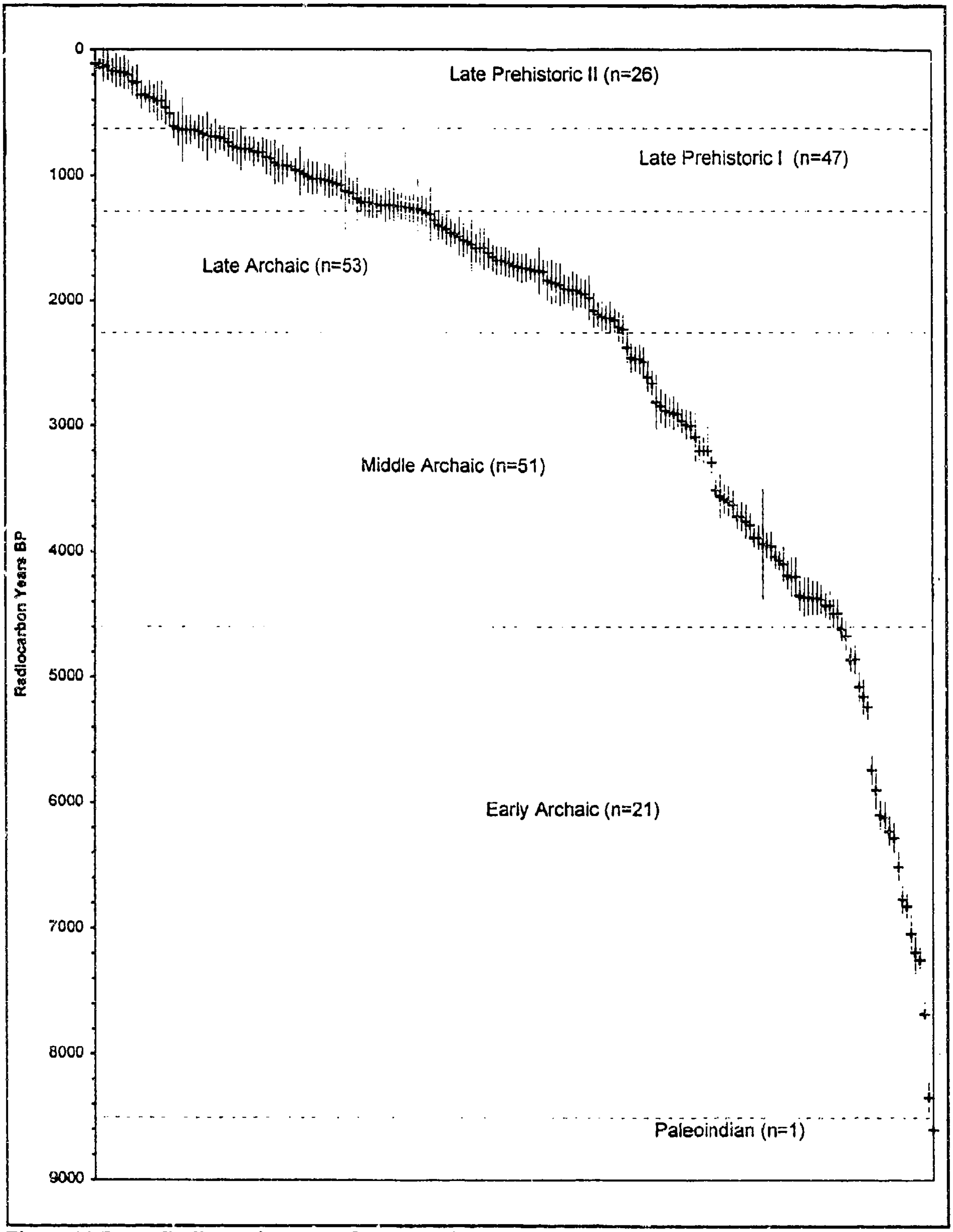


Figure 11.7 Radiometric Assays from 119 Sites.

(1985). Another possible shift may be near the beginning of the Driftwood phase. A charcoal date of 1580 BP was obtained from a buried midden Feature 1 with six Darl points in a 30 cm thick zone at 41BL755, TP 2. This would place the beginning of Prewitt's Driftwood phase back about 150 years. Considering the limited investigations and number of points and assays available at this time, it is probably too early to alter the existing framework, but these sites have the potential to address these apparent temporal changes and provide direct answers.

Surprisingly, only half (52%) of the projectile points we recovered were listed in Prewitt's Central Texas chronological framework. Another 35% are untypeable and could only be assigned to general dart and arrow categories. Of those listed by Prewitt (1981b; 1985), the Scallorn point of the Late Prehistoric I period is the most frequent type and represents fully 20% of the identifiable types. The more recent Perdiz point of the Late Prehistoric II period is represented by eight specimens or about 2% of the identifiable points. The Late Archaic period with seven listed point types account for nearly 27% of the identifiable points. The Middle Archaic period, with six point types, account for about 25% of the identifiable points. The Early Archaic, with its six listed point types, account for nearly 4% of identifiable points. Point frequency is not time progressive and thus probably related to cultural biases. The apparent low frequency of Perdiz points versus the high incidence of Scallorn points probably indicates a particular cultural settlement pattern. Further investigations are necessary to explain these different use or settlement patterns.

About 13% of projectile point types recovered at Fort Hood were not listed by Prewitt as key index markers for Central Texas (1981b; 1985) and include such types as Godley, Kent, Yarbrough, Palmillas, Ellis, Edgewood, Young, Bonham, Bulbar stemmed, and Fresno. These point types were not in occupations by themselves, but occurred in contexts associated with known Central Texas point types. Their presence here at Fort Hood requires further investigations to determine the type and amount of interaction represented by these different points.

11.9.2 Paleoenvironmental Research Issues

Although not directly part of the National Register evaluation process, many deep, stratified sites at Fort Hood provide excellent potential to conduct various paleoenvironmental studies to supplement or expand the present data base (Nordt 1992; 1993a). Our wood identifications on charcoal samples used for chronometric control in Phase 2 and macrobotanical analysis (Figure 11.8) adds to our understanding of what trees and other plants were present at various times in the past. At least two types of oak trees (Live Oak and White Oak) were present by as early as 4000 BP (41CV481), juniper as early as 3890 BP (41CV403) in the Hensen Creek valley, hickory by 2160 BP, hackberry by 1620 BP, and maple by 1300 BP. At 41CV117, a bulb from the Lily family dates to 2140 BP and reveals another plant and an important resource. Goosefoot plants at 41CV481 are present by at least 4000 BP. Once trees and plants become established in this area, we believe they persisted from then on, even though not directly visible in our present record. Although also not directly visible in our record, grasses are believed to have been a major part of the vegetation throughout time.

Abundant *Rabdotus* sp. shells were throughout most deposits (110 of 119 sites). One notable exception was the Paleoindian occupation at 41BL154. The earliest directly dated *Rabdotus* shell was from 41BL755 and dated to 7200 BP (CD-547, Beta-78135). Snail shells, besides their potential value in chronological control, also contribute to our broad understanding of past environments. Allen and Cheatum (1961) indicate three different *Rabdotus* species prefer three different habitats; sparsely wooded flood plains, grasslands, and semi-arid regions with brush habitats. *Rabdotus* at Fort Hood broadly implies a general grassland community mixed with trees. The percentage of projected mixture is not known,

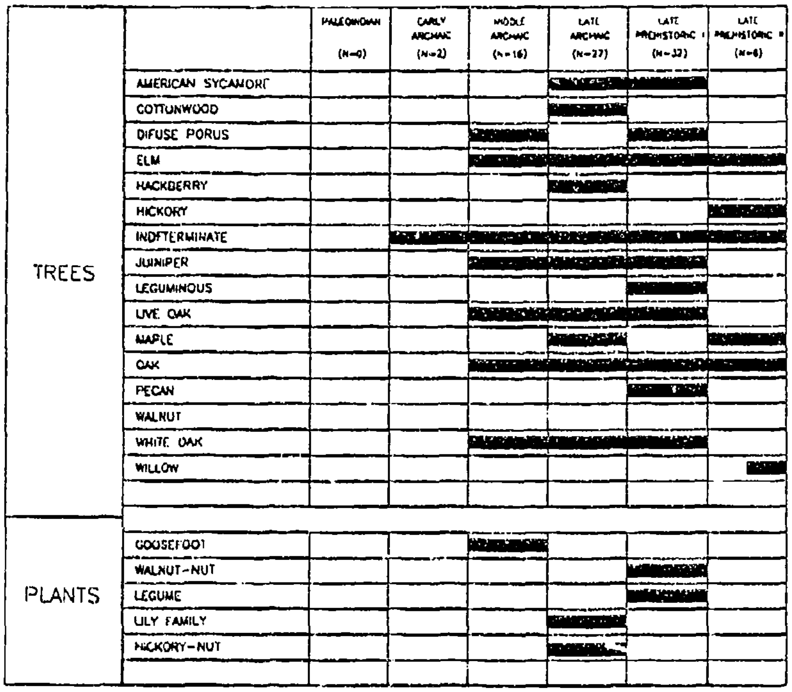


Figure 11.8 Plant Taxa by Time Period.

but presumably trees were at least in the valleys and possibly in small clumps in the uplands. *Rabdotus* and other land snail species should help refine and define environmental niches at Fort Hood.

Bison, a grass consumer, is another general indicator of grassland vegetation. Bison were present at least during the following points in time; about 8600 BP at 41BL154, at about 3000 BP at 41CV1038, between 2210 and 1720 BP at sites 41CV137, 41CV117, 41CV46, and during the last about 700 years at sites 41CV97, 41CV164, 41CV1038, and 41CV587. Carbon isotope values off four of 11 bison bones are questionable with values greater than -18‰ (Table 11.3), but five of six bison bones dating to the last 700 years yielded isotope values that average of about -12.8‰. This -12.8‰ value implies about 65% C4 plant consumption by these bison. This is about 3.0‰ lighter than the average measured value of -9.5‰ from a 475 year bison herd in West-central Texas (Quigg and Peck 1995) and bison of similar age in the northwestern Texas (Quigg 1993). If bison feeding habits are related to the dominance of C4 grasses as expected, then the Central Texas vegetation contained more C3 grasses and reflected a cooler and possibly moister climate, than the warmer and dryer Plains of west and northwestern Texas. This bison bone carbon isotope data supports the soil carbon isotope values for Fort Hood obtained and interpreted by Nordt (1993a). He projects 65 to 70% warm season C4 grasses throughout the last about 1,900 years, which is identical to the apparent C4 grass consumption by the bison from here over this same time.

Table 11.3 Bison Bone Ages and Isotope Values.

Age BP	δ13C[3]	Beta Lab No.	Site	Catalog No.	Provenience	Element	Weight (g)	Thickness (mm)	Comments
260[1]	-18.9[4]	84476	41CV587	28	T 4, L 8	long bone	4	7.1	
360[1]	-12.0	84478	41CV103	62	T 1, L 6	femur	23	7.9	
410[1]	-12.5	84474	41CV164	19	T 5, L 7	mandible	50	-	
690[1]	-12.8	84472	41CV97	669	T 3, L 24	humerus	43	8.1	
<800[1]	-13.3	84475	41CV174	403	T 3, L 17	long bone	17.5		
?	-13.3	84477	41CV101	104	T 3, L 8	radius	20	10.6	
≈1720[1]	-22.8[4]	84471	41CV46	150	T 1, L 11	vertebrae	5	-	intensively weathered
≈2140[1]	-17.9	84473	41CV117	65	T 2, L 5	calcanium	12.5	-	intensively weathered
2210[2]	-25.3[4]	84201	41CV137	136	T 2, L 10	long bone	7.6	10	
3000[2]	-10.2	84202	41CV103	154	T 3, L 12	indeterminate	25.3	6.3	
≈8600[1]	-23.8[4]	84470	41BL154	104	T 2, L 26	astragulus	45.5	-	

1. Associated radiocarbon date with bone sample.
2. Bone directly dated.
3. Ratio on protein remaining after demineralization of apatite, thus on extracted collagen.
4. Questionable carbon isotope value.

A single carbon isotope value of -10.2‰ on a bison bone (calculated to about 80% C4 consumption) dated to 3000 ± 60 BP (uncalibrated; Beta-84202) from 41CV1038 indicates C4 grasses dominated that period. However, Nordt (1993a) projected vegetation during that same period to have consisted of 60 to 65% warm season C4 grasses. Therefore, the bison bone isotope data does not directly support the site specific soil isotope data obtained by Nordt (1993a). Whereas bison are not known to feed on C3 trees and bushes, that isotope contribution of C3 trees and bushes is missing from the bone isotope results. That portion of the Fort Hood vegetation community contributed to the humate values used by Nordt in his projections. Therefore, these two isotope values may not be as far off as they seem. Compared to the carbon isotope values from Fort Hood bison bones which date to the last 700 years, the 3000 BP environment appears to have been warmer and dryer, but still with trees in the area.

Four light carbon isotope values ranging from -18.9 to -25.3‰ on bones believed to be bison pose serious problems. In 38 bison specimens from sites in the Texas Panhandle to the Coastal Plain that post-date 750 BP, Huebner (1991) did not document a single bison with a carbon isotope value lighter than -14‰. It is possible that three of the four values constitute laboratory errors, as a value of -21.5‰ would indicate 100% C3 consumption. Another explanation is the values reflect bison bone values that are beyond the expected ranges and reflect intense (more than 75%) C3 consumption. A third possibility is that these bone fragments are not actually bison remains. Presently, it is difficult to sort out and confidently explain these very light values. Further investigations and better identification and control will ultimately contribute to the explanation of these abnormal values.

Jackrabbit (*Lepus* sp.) bones from a burned rock midden F 2 at 41CV99 yielded a isotope adjusted date of 3950 BP and a carbon isotope value of -

18.6‰. Although no other jackrabbit values are reported here to compare with this value, it indicates a nearly 75% consumption of C3 vegetation by jackrabbits. This value is considered very light for this species which prefers grasses over woody plants and creates uncertainty concerning this sample. Cottontails (Sylvilagus sp.) prefer legumes and woody shrubs and have known values in the -18 to -20‰ range. Regardless of which taxon is represented here, the value indicates the rabbits consumed a mixture of C3 and C4 vegetation.

The relative abundance of *Amblema* sp. and *Lampsilis* sp. mussels as early as the Early Archaic period (about 8500 to 4600 BP) and continuing through at least 800 BP indicates moderate to good water quality in streams that had relatively moderate to high currents over a sand or firm mud bottom. Apparently, these general water conditions dominated through time, with dry periods or contrary conditions not recognized. *Amblema* sp., dominant during the Middle Archaic period, is known to have buried themselves in moist substrates when flows dried for several months.

Early Archaic occupations are not well represented in these valley settings maybe because of extensive scouring and erosion subsequent to those events, or our inability to detect and identify these deeply buried occupations. Apparently, when present and detected, the depositional pattern at that time was rapid and extensive. This is evident at 41CV1105 where at least 250 cm of deposits represent a period of about 1,100 years between 7200 and 6300 BP. This rapid depositional context is the type that would allow single cultural events to be buried and stratified if these areas were occupied.

Alluvial deposition also occurred during much of the Middle Archaic period as evidenced at 41CV99 where nearly 130 to 150 cm thick alluvial deposits represent about a 1200 year period between 4000 and 2800 BP. Here, stratified Middle Archaic occupations are represented and provide excellent opportunities to investigate multiple events in good context.

Similar depositional periods are recognized during later times at Fort Hood. This is reflected by a 100 cm deposit at 41CV98 representing a 200 year period from approximately 1400 to 1200 BP. This rapid deposition period may have continued on to about 900 BP, as evidenced by a 130 to 150 cm thick cultural bearing deposit at 41CV317. These two examples again document what the geomorphologists have previously stated and documented (e.g., Nordt 1992), that is, extensive periods of aggradation, erosion, and landscape stability existed in the past. Continued subsurface investigations will enable us to locate occupations in desired settings and explore in depth, events related to these various periods. Such occupations will provide important data returns to address more specific research questions and gain insights into past lifeways.

11.9.3 Subsistence Research Issues

Faunal data is summarized in Figure 11.9 by depicting the percentage of occurrence by species for each time period. The relative importance of each resource can be compared within time periods and also between periods in data, to detect changes of importance or use through time. Burned rock is an important link to processing food resources and is shown at the bottom of Figure 11.9 as a percentage to all other cultural materials. Faunal resources that represent the Paleoindian period (all from 41BL154) are probably too limited in number (n=64) to rely on for conclusive statements concerning an overall subsistence pattern. Even so, deer and deer size fragments appear prominent, with some turtle and other small mammals present. Surprisingly, large game such as bison are not apparent.

Early Archaic populations exploited mussels extensively (68% of the faunal assemblage) supplemented by medium to large mammals (24%), and a few turtles, but lacked small mammal remains. Preservation may have skewed this pattern and limited the small bones, but sample size (seven sites) may also be a contributing factor. Compared to later periods, the Early Archaic

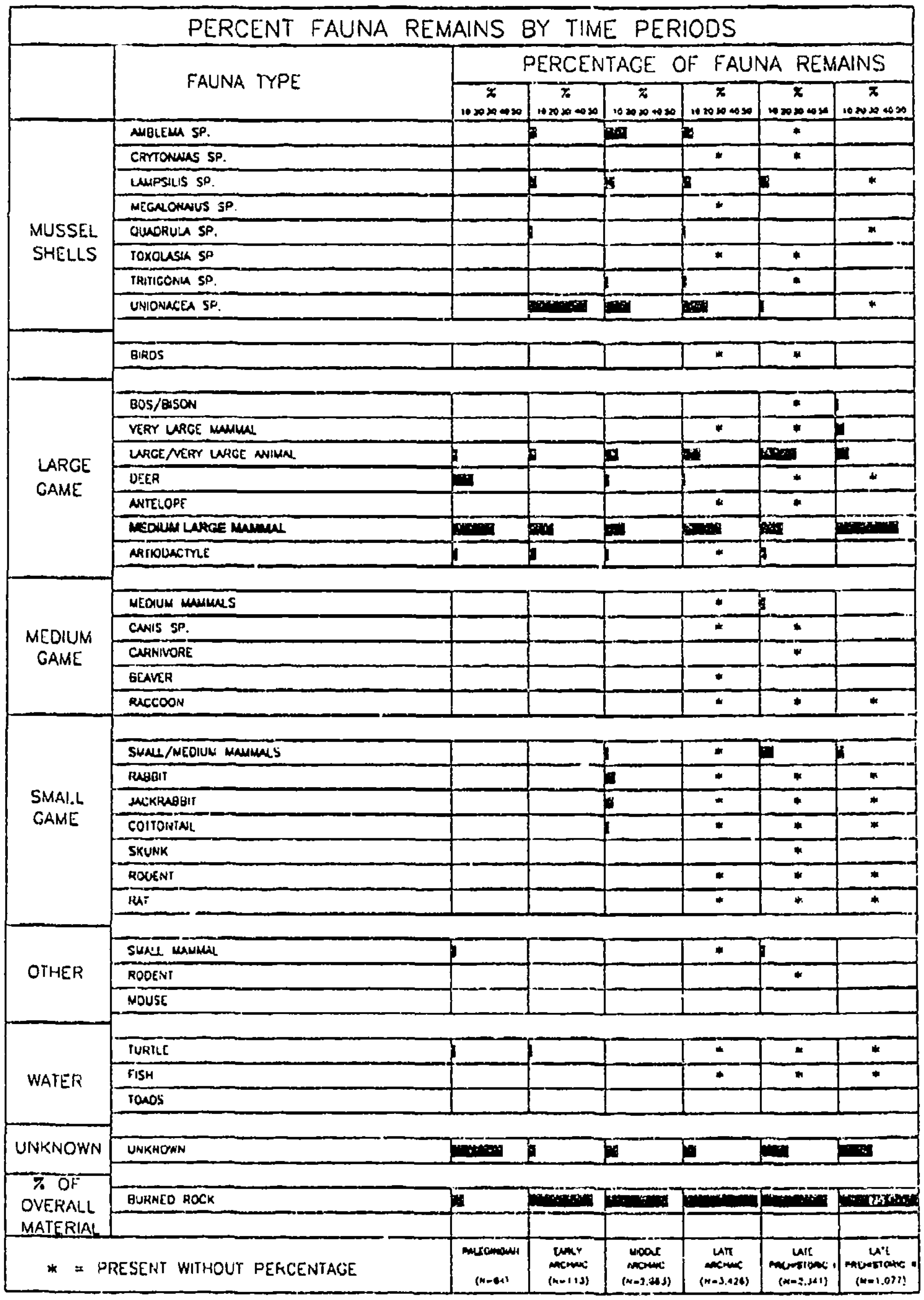


Figure 11.9 Faunal Taxa by Time.

accounts for the greatest percentage mussels.

During the Middle Archaic, mussels (44% of the faunal assemblage) are still a major contributor to the diet, with medium to large mammals, large to very large mammals, and small rabbit-size mammals well represented. Rabbit use is by far the highest during this time, but nearly all specimens are from one site, 41CV99 at the base of midden F 2. This high use of rabbits may be site specific, representing one particular event, and may not reflect the entire period. This does document broadening the resource base, although turtles are no longer represented.

Mammal diversity expanded during the Late Archaic, although the previously prominent mammals which represent medium to large, large to very large species, and mussels still dominate. What is not apparent or known from these percentages is how many small mammals are represented by one or two specimens. Mice, rats, birds, and other rodents could easily have been meals for non-human predators, especially in many of the rockshelter deposits where coyotes and raccoons visit.

Diversity and similar size mammals were again prominent during the Late Prehistoric I. It is unclear which and how many small mammals were actually used as food resources by humans. Larger size mammals appear to have increased in frequency. Small to medium size remains were also well represented, but a noticeable decrease occurred in mussels.

A major shift in subsistence is apparent during the Late Prehistoric II where evidence of medium to large mammals increased significantly, diversity of smaller mammals decreased, and mussels became almost not existent. Although not directly reflected in Figure 11.9, the increase in large mammals is thought to be that of bison.

Burned rock represents a very high, 40% to 50%, of the total cultural assemblages throughout the entire Archaic period and in Late Prehistoric I (see Figure 11.9). A noticeable increase occurred during Late Prehistoric II where burned rock represents about 75%. Only the Paleoindian period (with a one site, 41BL154) shows a dramatic lack of burned rock (about 12%). This may reflect that specific processing/cooking technologies were not in use at that time.

The near absence of grinding tools such as manos and metates provides little evidence for plant or nut processing. However, direct evidence from a burned Goosefoot seed (41CV481) dated to about 3940 BP, a burned bulb of the lily family (41CV117) dated to about 2140 BP, a carbonized walnut (41BL567) 790 BP, and a carbonized pecan (41BL433) dating to the Late Prehistoric I period provide glimpses as to what plant resources may have been utilized. Poor preservation of plants is key here since carbonized plants are the only ones to survive. This skews our understanding of total resource utilization by these populations.

11.9.4 Technological Research Issues

Food-related cooking technologies, including heating, steaming, boiling, etc., are inferred through the presence or absence of specific feature types (Figure 11.10). The six time periods yielded 137 features and reveal some consistencies and minor changes over a 8600 year time span. Unfortunately, we are unable to identify specific cooking features with specific food resources (we doubt such a correlation existed). Early Archaic period occupations reveal a variety of burned rock features including: middens, flat hearths, basin hearths, and burned rock concentrations at relatively equal frequencies. In the subsequent Middle Archaic period, feature types and frequency expanded to include burned rock mounds, mussel shell lenses, flat hearths without rocks, and dispersed burned rock. Burned rock middens are twice as frequent as the second most frequent feature type - basin heaths with rock. Basin hearths are considerably more frequent than flat hearths. The Late Archaic period reveals a slight increase in the dominant burned rock middens (up to 40% of the period total). Flat hearths which contained rocks were identified at about one third

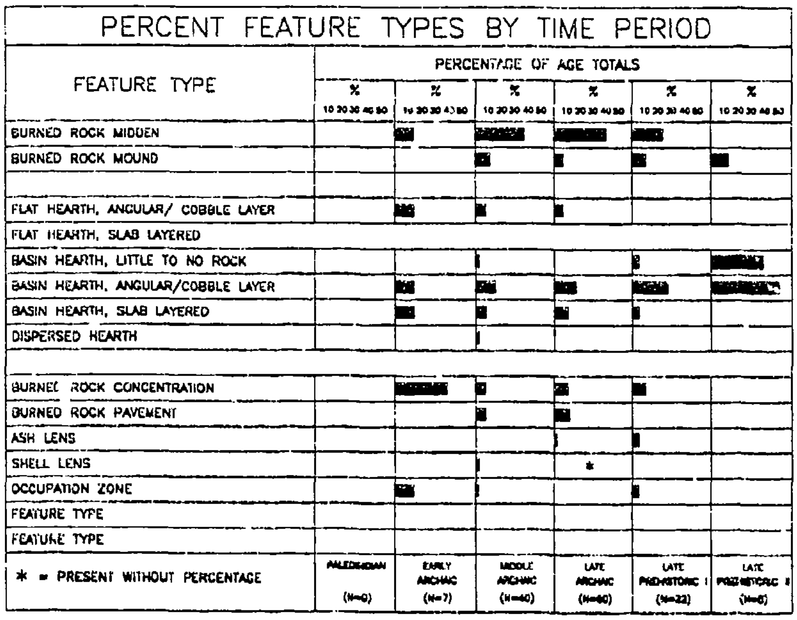


Figure 11.10 Feature Types by Time Period.

the frequency of basin hearths with rocks. Ash lenses are first recognized during this period. The Late Prehistoric I period saw a decrease in burned rock middens, whereas basin hearths with rock continued to increase and dominate flat hearths with nearly 28% of the period total. Late Prehistoric II reveals sparse features (n=8) with only three types represented. Basin hearths, with and without rock, account for seven of the eight features. Burned rock middens, so frequent previously, are absent from this Late Prehistoric II period and only one mound is represented. Here again, small sample size appears to have skewed the results.

Four to five similar feature types exist through most time periods. The most apparent change occurred during Late Prehistoric II period. At that time, a definite decrease in feature types occurred. This is the same time when the bow and arrow and pottery manufacturing technologies transpired, and the subsistence resource apparently changed. It is unclear if or how these other changes would directly effect the feature types, but a cultural change is possible. Absent feature types include burned rock middens, flat hearths, burned rock concentrations, and burned rock payments. If expansion of the feature types holds to the present pattern, then a change in cooking techniques occurred at the beginning of the Late Prehistoric II.

All five time periods have relatively high frequencies of basin hearths with rock, with the most recent times, having the highest percentage. The Late Prehistoric II also has high frequencies of basin hearths without rock, especially compared to early periods. What food resources were associated and how they were cooked in various features is not clear. It may be that the addition of pottery changed some cooking features to accommodate the vessels.

Mussel shells, representing from 0% to 33% of the overall cultural assemblage per period, were documented from about 8500 to 700 BP. These frequencies indicate a long and steady use. However, only two features, one mussel shell lens (F 2C at 41CV97) in the Middle Archaic and a mussel shell midden (F 3 at 41BL339) during the Late Archaic, were identified in the 137 features from the 119 tested sites. Their absence in the Paleoindian period is probably negatively influenced by the sample size, whereas shell features in the Middle and Late Archaic periods may reflect greater use or more abundant resource. It is not clear if specific hearths were employed to cook, stem or heat mussels. A much larger sample of shell features in direct association with burned rock features is required prior to speculating on a cooking technique.

Lithic material utilization over time is reflected in the overall debitage assemblage (n=47,356) depicted by period in Figure 11.11. Material types by the four known chert provinces plus one indeterminate group at Fort Hood are presented for each of the six time periods. The four arbitrarily defined chert provinces in Fort Hood represent 30.4% of the overall debitage assemblage. The high frequency of indeterminate pieces (n=32,887) is partially the result of our conservative nature of the material identification. This stemmed from the fact that we were unwilling to classify tiny pieces that may lack diagnostic characteristics of a particular material type. It is quite possible that the Indeterminate Light Brown chert may actually be the same as Heiner Lake Translucent Brown, and thus represent the same source. However, our conservative approach separated these into two categories. Other indeterminate cherts may also be unrecognizable parts of identified cherts from known source areas.

Examination of lithic materials from projected source areas over time indicates some trends and shifts of material usage. Site distributions across the landscape, frequencies of sites per time period, lack of horizontal excavations, and prehistoric access to each resource area, all influenced the use patterns observed here. The following observations are preliminary and will undoubtedly change as more sites in different parts of the fort are tested and sites undergo more intensive examination.

Lithic materials from Southeast Range dominate the known source areas during the Paleoindian (30%) and Early Archaic (33%) periods. This source area is primarily represented by Heiner Lake Translucent Brown chert (see Figure 11.11). Intense use of this lithic resource area drops off sharply during the Middle Archaic (6%) and maintains this lower level use pattern during all subsequent periods. The one Paleoindian site (41BL154) and the thick Early Archaic deposits at 41BL154 are situated in the middle of the Southeast Range resource area. Another Early Archaic site, 41CV184 in northern Fort Hood, is dominated by North Fort Range material (63% of the total site debitage). Apparently site location is the key factor that influenced the lithic material use pattern detected. Low but consistent use of the North Fort Range materials is observed during Paleoindian and Early Archaic periods. However, specific material selection may be influenced by the different surface exposures/access at these two sources and not totally a selection of one chert quality over another.

Gray/Brown/Green chert, from North Fort Range, reveals a major use period during the Middle Archaic where it accounts for over 20% of the total debitage (see Figure 11.11). However, a single site, 41CV48 along Owl creek, has a very high incidence of this material type that accounts for 93% of the overall total. This again implies site location was a key factor in the material use pattern observed, as the early populations used what was immediately available.

Fort Hood Yellow chert, from the Southeast Range, reveals a constant increase in use through time starting in the Paleoindian period with 2% and continued through the Late Prehistoric II period with 17% of the period assemblage (see Figure 11.11). This latest period has this one

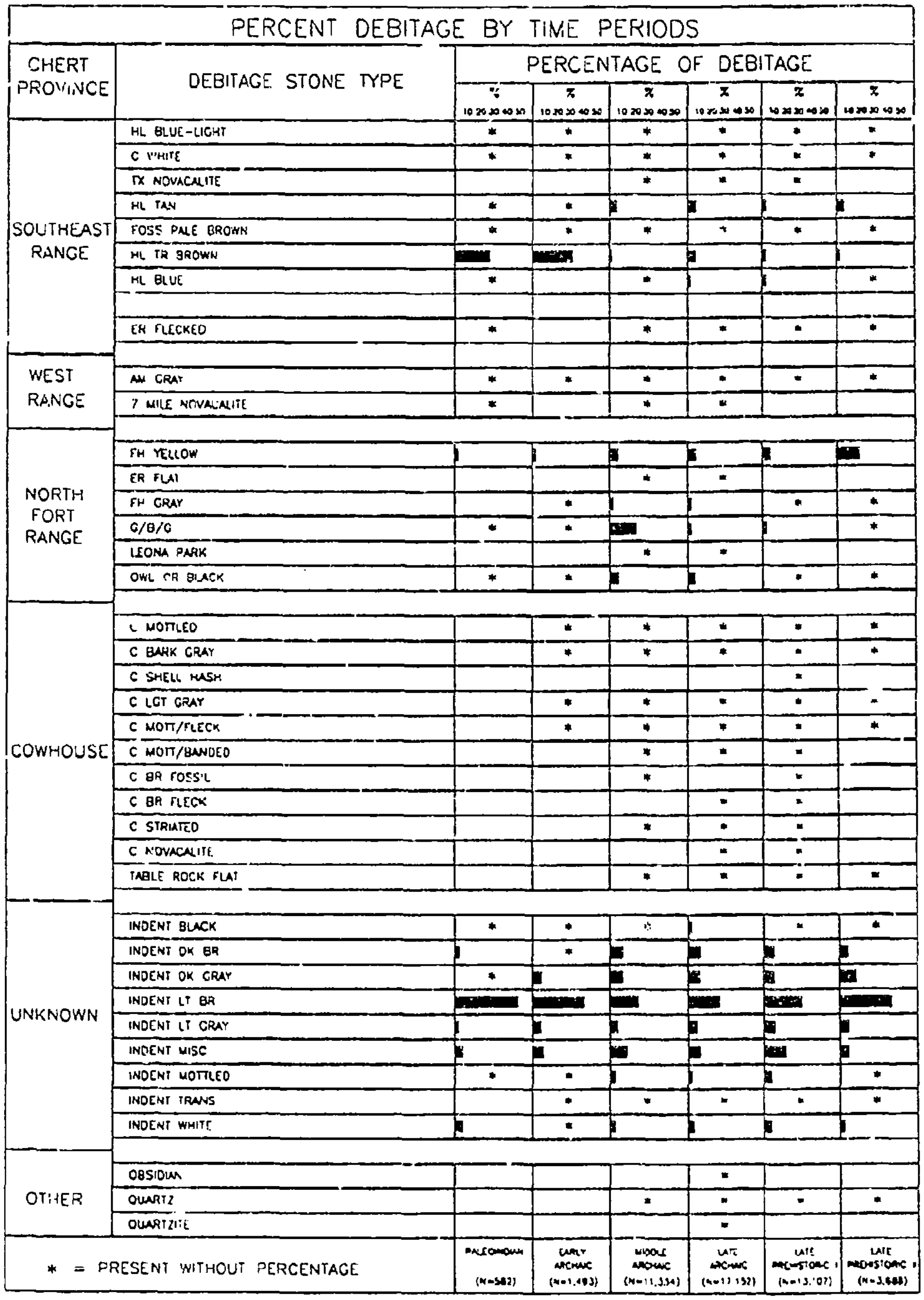


Figure 11.11 Lithic Debitage by Time Period.

dominant known material. Again, 81% of the Fort Hood Yellow in the Late Prehistoric II period' came from a single site, 41CV115 in the northern part of the fort. Consequently, one productive site in a resource area can and has skew the information return for a whole period.

Two lithic source areas, West Range and Cowhouse, revealed low but consistent frequency of use through time. Cherts from these two areas appear to have been accessible and used as and when necessary. Gravel resources in the Cowhouse valley may not have been available for procurement at specific times because of high water or sediment buildup. If periods of inaccessibility occurred, these must have been during much shorter time intervals, than the thousand year long periods. This broad overview of lithic resource use pattern may best examined on a site by site bases or smaller areas such as by stream valley.

Of the tens of thousands of lithic materials recovered and identified, the single piece of obsidian is the only non-local specimen. This piece was from mixed deposits in a burned rock midden at 41CV137 and was sourced to Malad in Idaho (Asaro and Stross 1995). Quartz and quartzites are locally available from various gravel sources, but represent less than 1% of the debitage in the four periods where it is present. Locally available quartzite appears specifically selected and used for specific tools and or tasks. The selected use of quartzites significantly restricted the amount of debitage left behind.

If the Fort Hood region was a major lithic resource center, then it stands to reason that little or no raw material was brought to the Fort Hood area. It will be up to investigators working beyond Fort Hood and the Central Texas area to determine if Fort Hood Edwards chert is moving out from this source area. In one such study, Hofman et al. (1991) stated that Central Texas Edwards chert (specific type, colors, or source is unknown at present) is represented in the Folsom assemblages from the Lindenmeier site in northern Colorado and the Folsom site in northeastern New Mexico. This establishes that Edwards chert, which can include materials from Fort Hood, was known and sought early on, and therefore probably sought over time by groups over a large area.

Tool assemblages, as evidenced by general tool types represented in the six time periods, are presented in Figure 11.12. For each broad time period the identifiable stone tool assemblage represents less than 1% of the entire cultural assemblage recovered. Recognizable tools, even in the large productive burned rock midden deposits, are therefore extremely rare in Fort Hood assemblages. Projectile points are generally the most frequent individual tool type in each period, accounting for a low of 17% during the Middle Archaic to a high of about 50% in the Paleoindian period. The exception to their dominance was during the Middle Archaic period. Projectile points reflect large game procurement activities which obviously played a major role in the lifeway pattern through time. During Archaic times, which are often discussed in terms of their diversified subsistence pattern, point frequency was at the lowest with about 22% for the Early, about 17% for the Middle, and about 20% for the Late Archaic periods. These low point frequencies contrast sharply with the much higher percentage at other periods; nearly 50% in the Paleoindian, about 32% for the Late Prehistoric I, and about 31% for Late Prehistoric II period. In general, point frequency may reflect changes in subsistence pattern with the earliest and latest periods apparently more reliant on large game resources than during the Archaic periods.

Expedient flake tools, including utilized flakes, edge modified flakes, gravers, and spokeshaves, are also very prominent in all assemblages. The utilized flake class by itself is the second most frequent tool type in most periods. Flake tools fulfill numerous and diversified general camp activities including cutting, scraping, whittling, and sawing. Their expedient nature accounts for their high frequency in most sites.

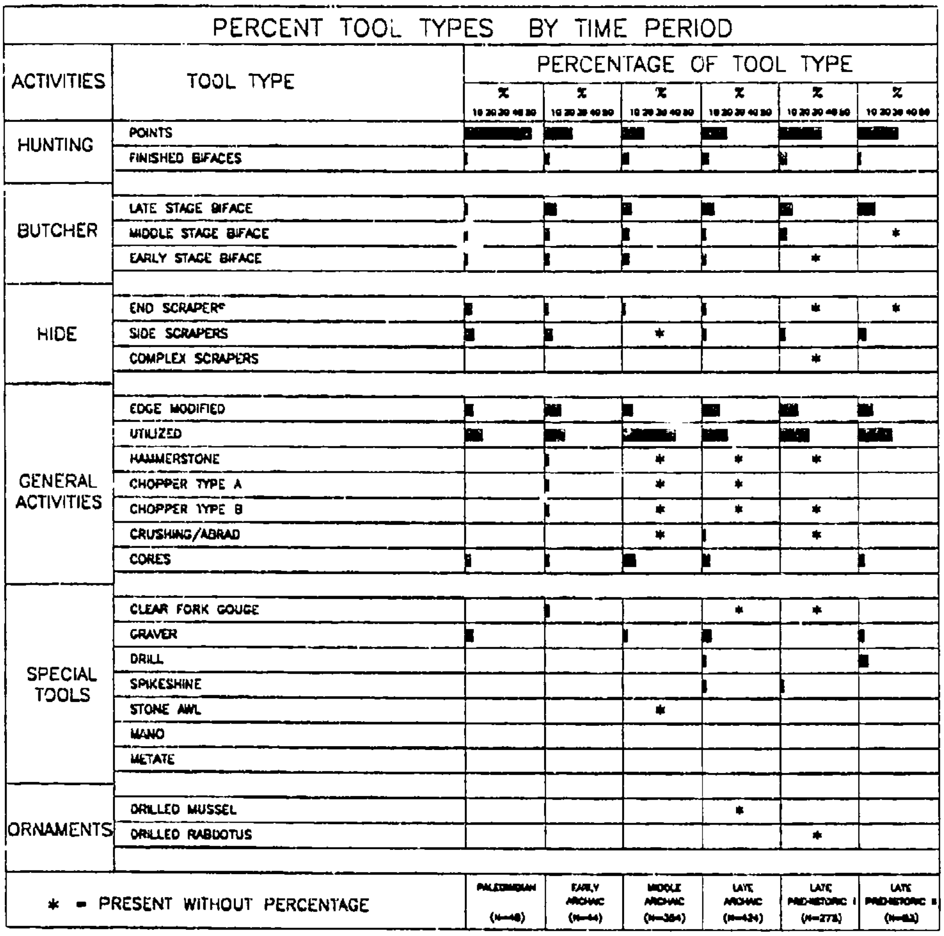


Figure 11.12 Lithic Tools by Time Period.

Bifaces as a group are also well represented. Biface frequencies appear opposite projectile point frequencies. That is when points are prominent, bifaces are lower in comparison. This is apparent with bifaces representing a low of 8% during the Paleoindian period and a high of 23% during the Middle Archaic period. The biface class is projected to be used to transport raw chert collected from the original source to other areas. Therefore, certain stages of reduction may not be well represented in the tool assemblages, simply because these tools are being carefully curated.

Curation may be a possible explanation for the limited frequency of formal scraping tools in each period. Scrapers represent less than 5% of each tool assemblage. However, scrapers are not generally thought of as tools that are often curated if raw material is readily available. Their overall absence here may be directly related to the frequency of scraping activities conducted at sites in this area.

Other stone tool types show very limited frequency or are even absent during each of the six periods (see Figure 11.12). The limited area excavated at each site often focused on features and may have contributed to the lack of certain tool classes. However, the absence of ground stone may be more influenced by a recognition problem. Sandstone, normally thought of as the raw material most often employed in these grinding tasks, is not readily available in the Fort Hood region. Consequently, these sandstone items may have been highly curated. If rounded quartzite cobbles were employed in various grinding tasks instead of the sandstone implements, then plant processing wear would be very difficult to see on quartzite. Lack of documented bedrock mortars may imply the abundant limestone bedrock did not substitute for sandstone metates. It is possible that wooden mortars served this purpose and are therefore not visible in the record. Many tool classes were not represented in this current assemblage, but associated tasks may still have occurred, and are not readily apparent.

The lithic material types represented in the identified stone tool assemblage provides a different picture of lithic usage, than observed in the debitage assemblage (Figure 11.13). Limited tools and material types are present for some periods such as the Paleoindian (n=24) and Early Archaic (n=44), but their representative percentages reveal trends within periods. In broad terms this approximately 1,200 piece assemblage from 119 tested sites, scattered over broad regions of the fort, indicates West Range material was not often used for stone tools. Cowhouse Range materials were slightly more frequency but generally limited to a few selected colors. Indeterminate Light Brown chert was very prominent, as were unknown sources in general. A few identifiable chert types such as Heiner Lake Tan, Heiner Lake Translucent Brown, Fort Hood Yellow and Gray/Brown/Green are well represented over time. In this tool assemblage, Heiner Lake Tan chert dominates all identifiable cherts, in all periods, except during the Early Archaic. It ranges from a low of 14% in the Early Archaic to a high of about 33% in the Paleoindian period. Heiner Lake Tan even dominates the unknown source materials, except during the Late Prehistoric I.

A second identifiable type, Heiner Lake Translucent Brown chert, was also a prominent material during the two earliest periods (21% and 25% respectively) and actually dominated during the Early Archaic. This chert appears less prominent in the younger assemblages. Fort Hood Yellow chert was used throughout time on a relatively low, but steady frequency and accounted for 4.5% during the Early Archaic to a high of 10% during the Middle Archaic. Gray/Brown/Green chert was another constantly utilized chert that dominated during the Middle Archaic period with nearly 20% of the tool assemblage material.

The Paleoindian period, with it's limited number of tools, reveals some interesting use patterns (see Figure 11.13). The one component represented at 41BL154, lies in the Southeast Range Province and is dominated (54%) by material from that chert province. Tools of Owl Creek Black from the North Fort Province and Cowhouse Mottled/Flecked from the Cowhouse Province are present. This use of material from at least three different known source areas in Fort Hood reflects accessibility by that time and suggests these people utilized different resources from across the fort. This broad use pattern is continued throughout the subsequent periods. At this broad level of interpretation, only limited selection is apparent. More pronounced patterns may be revealed in site specific assemblages or from sites clustered along a single drainage. To emphasize the potential problems in trying to interpret the smaller assemblages (the three smallest tool assemblages; the Paleoindian, Early Archaic and Late Prehistoric II periods) also reflect the fewest number of material types. As these time restrictive assemblages increase in size, major changes in use patterns will undoubtedly be reflected.

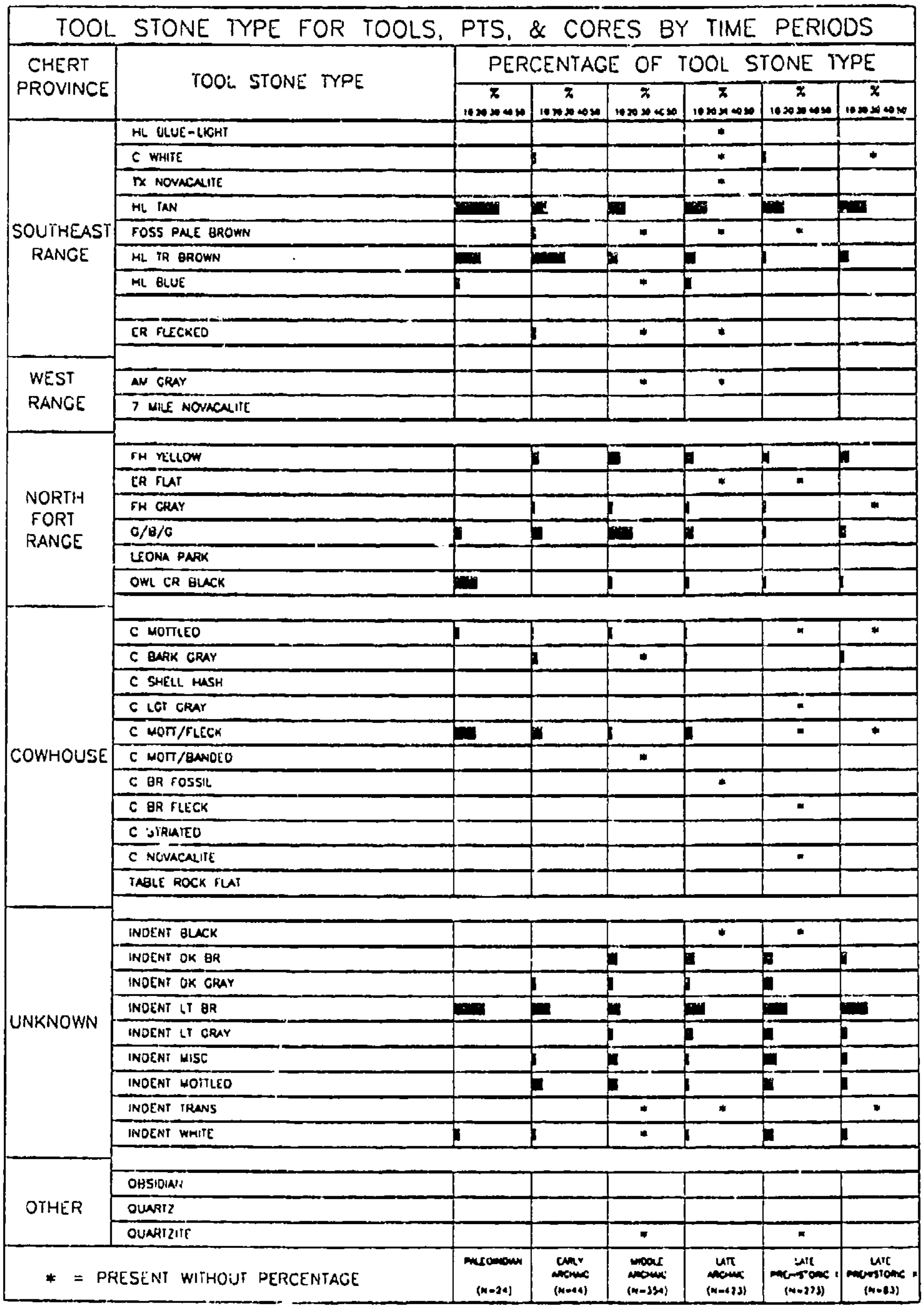


Figure 11.13 Material of Lithic Tools by Time Period.

11.9.5 Suggestions for Future Research

As we have suggested in the four general discussions above, many interesting questions of cultural process and cultural change over time can not be satisfactorily addressed until more extensive assemblages are acquired. Our investigations have yielded fairly small data sets from a tremendously large sample of sites. We know of no other project in Central Texas which has brought together comparable test excavation data from so many prehistoric sites. We have tried, hopefully with some success, to squeeze substantive information from the testing level data base at our 119 sites, and to expose some avenues warranting further exploration. What is needed in the future are more extensive data sets from a smaller and more carefully selected sample of sites. We expect that data recovery excavations, if such are ever needed at Fort Hood, will provide such data sets.

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APPENDIX A

Database for 119 Sites (CD-ROM)

Errata

The attached CD-ROM has a missing program file and is not accessible using the instructions given in section 3 of this appendix (pages A-17 through A-21). Please disregard those installation instructions. To use the database, the user must have Microsoft Access or another database program (such as dBase or FoxPro) which reads *.mdb files. If you use Microsoft Access, do the following:

1) Insert the CD-ROM.
2) From Windows File Manager, run the "setup.exe" file on the CD-ROM. This will install the database onto your hard drive. *Ignore the error message* regarding file "WRKGADM.EXE". (Note: If you use File Manager to copy the database onto your hard drive, you will be able to view, filter, and export the data but will not be able to construct queries.)
3) Run Access. From your hard drive (not the CD-ROM), open the "forthood.mdb" database and construct and run queries as usual.

If you use Access and do not have enough free disk space to install the database, do the following:

1) Insert the CD-ROM.
2) Run Access.
3) From the CD-ROM, open the "forthood.mdb" database. Construct and run queries as usual. The query can not be saved, but may be exported to Microsoft Excel.

NOTE: Under either method, be aware that Excel spreadsheets accept a maximum of 16,384 records. If the record count displayed at the bottom of a query is greater than 16,384, an error will result. In this case, either 1) use a different filter to limit the number of records, or 2) create two or more subsets of the target data. After your initial data reduction in Excel, the subsets may be combined as long as the total number of records is less than 16, 384.

USER'S GUIDE TO THE FORT HOOD DATABASE AND DATABASE ACCESS ENGINE

James T. Abbott

This document describes the structure of the TRC Mariah Fort Hood Database and methods of retreiving data from it, including use of the Fort Hood Database Access Engine included on this CD-ROM. The text of this *readme* file is essentially the same as the hard-copy introduction to Appendix A presented in the report. The first part of the document describes the structure of the database and presents a list of fields and possible values in each field. The second part of the document describes use of the utility extraction engine provided for users who do not have a full licensed copy of Microsoft Access.

Both options for using the database require a computer with a CD-ROM drive, an Intel 486 processor or better, at least 4 mb of RAM, and Microsoft Windows 3.1 or later. At least 25 mb of free hard disk is also required; 50 mb or more is recommended.

1.0 STRUCTURE OF THE FORT HOOD DATABASE

The final Fort Hood database on this CD-ROM consists of a flat-file database containing both provenience and attribute information. It is a simplification of a four part relational database consisting of the following tables: SITE INFORMATION (119 records), FEATURE INFORMATION (208 records), PROVENIENCE INFORMATION (6,000-odd records), and ARTIFACT ATTRIBUTE INFORMATION (44,000-odd records). The hierarchical structure of the original database has been collapsed into a single table consisting of 44,393 records containing 79 fields. Because the database is a flat file, great care must be exercised in the extraction of data pertaining to sites, features, or proveniences, because the same information occurs in multiple records in the file. Therefore, extraction of these fields must be done using unique record criteria, and many types of provenience data cannot be reliably extracted at the same time as artifact data from the same context.

To understand the process, it is useful to conceptualize the hierarchy inherent in the data. Site level data (Source=SiteDB) is the highest order data in the hierarchy, and consists of basic attributes common to every record from the site: trinomial designation, eligibility status, elevation, etc. The same values are present in each record pertaining to the site. For example, the variable "elevation" refers to the mean elevation of the site as a whole, as would be reported on the site form, not to the elevation of individual artifacts recovered from the site or to the elevation of individual proveniences within the site; therefore, each record relating to the site contains the same value for "elevation." Provenience data (Source=ProvenienceDB) describes attributes of individual proveniences defined within the site boundary. Each artifact recovered is related to a specific provenience, but each provenience typically relates to a number of different artifact records. Note that burned rock data (e.g., weight, count) is treated as provenience-level data, and that proveniences do not equate to levels (although they are frequently the same, a level may contain more than one provenience, as in cases where quadrant and/or float samples were taken, or where the interior and exterior of a small feature were treated separately). Feature data (Source=FeatureDB) is a specialized type of provenience data that applies to proveniences associated with features, and is null when no feature is associated. The lowest level of the hierarchy consists of artifact data (Source=ArtifactDB).

To illustrate the importance of understanding this hierarchy, suppose that you want to extract counts for debitage and burned rock from a given feature. You run a query to extract counts where Class=Lithic Debitage. If the field N_Burned_Rock, which is a provenience attribute, is extracted at the same time, then the same values for burned rock count will be extracted repeatedly, because each debitage record from a given provenience (there will be one for each applicable material type and size grade) will contain the same provenience information. Any sum of the burned rock data will therefore be wildly inaccurate.

To circumvent problems of this type, it is a good idea to always extract measured quantitative data from the artifacts source separately from related data from the other sources. Accurate counts can be obtained by extracting unique records using only provenience, site, and feature fields in the query. Of course, extraction of provenience data (e.g., TP, Level) for locational reference at the same time that artifact data is extracted works fine; just don't do numerical operations on provenience fields in the extracted dataset.

There are several different conventions for missing and inapplicable data used in the database. The first of these is a null (empty) field, which means the field is not applicable to the record. For example, null values in the feature attributes indicate that the provenience is not associated with a feature. Most of the null values in the database are artifacts of the collapse of the relational database into a flat-file structure. Another value with the same meaning is the string "n/a," which was used to denote inapplicable data during entry and compilation of the original hierarchical database in order to prevent confusing missing data with fields that were not applicable to the record. Another distinction of note is the difference between the values 0 and -9999 in numeric fields. The value 0 is typically used to indicate a value of zero, but in a few cases where the numeric value is primarily a label (e.g., Test Pit, Backhoe Trench) it is used as the numeric equivalent of the "n/a" placeholder. Thus, a record where Test Pit=0 means that the record pertains to a provenience that was not associated with a test pit (e.g., a backhoe trench or surface find). However, where the numeric value reflects a measured or counted value (e.g., count, weight, length, etc.), the value -9999 is used to indicate that the data was not collected. Because the system is quite complex, it is recommended that you consult the values and ranges for each variable printed below when formulating queries of the database.

2.0 DATA FIELDS

The following sections explain the name, data type, source, and possible values of each field in the database:

Field Name: Site
Data Type: Text
Source: SiteDB
Description: Trinomial site designation with the initial "41" indicating Texas omitted.
Value List:

BL0154	BL0564	CV0044	CV0201	CV0595	CV1097
BL0168	BL0567	CV0045	CV0240	CV0849	CV1098
BL0198	BL0568	CV0046	CV0271	CV0900	CV1099
BL0208	BL0598	CV0047	CV0317	CV0901	CV1105
BL0233	BL0608	CV0048	CV0319	CV0905	CV1116
BL0339	BL0740	CV0071	CV0332	CV0913	CV1129
BL0415	BL0743	CV0088	CV0378	CV0918	CV1136
BL0421	BL0744	CV0090	CV0379	CV0927	CV1165
BL0427	BL0751	CV0095	CV0380	CV0935	CV1166
BL0431	BL0754	CV0097	CV0389	CV0936	CV1167
BL0432	BL0755	CV0098	CV0397	CV0960	CV1195
BL0433	BL0765	CV0099	CV0403	CV1007	CV1200
BL0454	BL0773	CV0115	CV0478	CV1008	CV1378
BL0470	BL0821	CV0117	CV0481	CV1011	CV1391
BL0504	BL0834	CV0124	CV0484	CV1023	CV1400
BL0513	BL0844	CV0125	CV0493	CV1027	CV1403
BL0531	BL0850	CV0137	CV0495	CV1033	CV1423
BL0532	BL0853	CV0164	CV0582	CV1038	CV1471
BL0538	BL0886	CV0174	CV0587	CV1080	CV1472
BL0560	BL0888	CV0184	CV0594	CV1085	

Field Name: Feature
Data Type: Text
Source: FeatureDB
Description: Feature number. Internal features typically are designated by an alpha suffix (e.g., Feature 1A).
Value List:

1	3	6	12	18
1A	3A	7	13	19
2	3B	8	14	n/a
2A	4	9	15	
2B	4A	10	16	
2C	5	11	17	

Field Name: TP
Data Type: Number (byte)
Source: ProvenienceDB
Description: Test Pit Number. Most, but not all, are 1 x 1 m. A value of 0 indicates no test pit association.
Range: 0 to 13

Field Name: BHT
Data Type: Number (byte)
Source: ProvenienceDB
Description: Backhoe trench number. A value of 0 indicates no trench association.
Range: 0 to 23

Field Name: Level
Data Type: Number (byte)
Source: ProvenienceDB
Description: Level number. Most, but not all, are 10 cm levels. A value of 0 indicates no level association (e.g., surface find).
Range: 0 to 62

Field Name: Field_Number
Data Type: Number (integer)
Source: ProvenienceDB
Description: Unique field provenience number (within context of site). Each level excavated had at least one field number.
Range: 1 to 797

Field Name: Class
Data Type: Text
Source: ArtifactDB
Description: Class of artifact or sample.
Value List:

(null value)	Grd/pcked stone	no recovery
Bivalve deb. sample	Historic	Ochre Sample
Bivalve Shell Umbo	Lithic Core	Other Samples
Bone Debitage	Lithic Debitage	Radiocarbon Sample
Bone microdebitage	Lithic microdebitage	Snail Shell
Bone Tool	Lithic Point	Snail Sample Analysis
Burned Earth Sample	Lithic Tool	Soil Sample

Ceramic	Macrobotanical Sample	tufa sample
Float Sample (light)	Modified Shell	

Field Name: Count
Data Type: Number (integer)
Source: ArtifactDB
Description: Number of items in relevant unique record. Value of 0 indicates a sterile provenience.
Range: 0 to 610

Field Name: Site_Type
Data Type: Text
Source: SiteDB
Description: Open site or shelter
Value List:

open camp	rockshelter

Field Name: Site_Landform
Data Type: Text
Source: SiteDB
Description: Primary landform represented by site. Note that this is not necessarily the same as unit topography.
Value List:

colluvial toeslope	T2 terrace
slope	upland
T0 terrace	rockshelter
T1 terrace	

Field Name: Site_Status
Data Type: Text
Source: SiteDB
Description: NRHP Eligibility
Value List:

eligible	not eligible

Field Name: Site_Elevation(m)
Data Type: Number (Integer)
Source: SiteDB
Description: Approximate elevation of the site in meters.
Range: 180 to 358

Field Name: Site_Grid_E
Data Type: Number (Byte)
Source: SiteDB
Description: Easting coordinate of the Fort Hood kilometer grid (PK grid) containing the site.
Range: 4 to 37

Field Name: Site_Grid_N
Data Type: Number (Byte)
Source: SiteDB
Description: Northing coordinate of the Fort Hood kilometer grid (PK grid) containing the site.
Range: 43 to 72

Field Name: Site_Training_Area
Data Type: Number (Byte)
Source: SiteDB
Description: Fort Hood training area polygon containing the site.
Range: 2 to 72

Field Name: Site_Group
Data Type: Text
Source: SiteDB
Description: Analytical spatial grouping to which the site is assigned.
Value List:

Cowhouse/Taylor/Bear	Shell Mountain
East Cowhouse	Shoal/Turnover
East Henson	Stampede
Nolan South	Table Rock
Nolan/Cowhouse	Turkey Run
Owl Creek	West Cowhouse

Field Name: Site_Drainage
Data Type: Text
Source: SiteDB
Description: Stream draining the primary watershed in which the site is located.
Value List:

Bear	Henson	South Nolan
Browns	House	Stampede
Bull Branch	Leon	Table Rock
Buttermilk	North Nolan	Taylor
Clabber	Oak	Turkey Run
Clear	Owl	Turnover
Cottonwood	Ripstein	Two Year Old
Cowhouse	Shoal	

Field Name: Feature_Type
Data Type: Text
Source: FeatureDB
Description: Descriptive feature type designation.
Value List:

(null value)	BR mound	hearth w/angular rock
ash lens	BR mound, annular	hearth, dispersed
ash/charcoal stain	BR mound, domed	hearth, slab lined
basin hearth, no rock	BR pavement	historic
basin hearth, slab lined	burial	mussel shell midden
basin hearth, with rock	burned stump	occupation zone
BR concentration	cache	post mold
BR midden	depression/pit	shell lens

Field Name: Feature_Length(m)
Data Type: Number (single)
Source: FeatureDB
Description: Approximate length in meters of long axis of feature in plan view. May be estimated (see Feature_Size_Accuracy field). Null value indicates no feature; -9999 indicates not estimated.
Range: 0.2 to 250; -9999; (null value)

Field Name: Feature_Width(m)
Data Type: Number (single)
Source: FeatureDB
Description: Approximate width in meters perpendicular to long axis of feature in plan view. May be estimated (see Feature_Size_Accuracy field). Null value indicates no feature; -9999 indicates not estimated.
Range: 0.1 to 120; -9999; (null value)

Field Name: Feature_Size_Accuracy
Data Type: Text
Source: FeatureDB
Description: Reliability of feature dimensions. Dimensions of many features were estimated based on excavated portion (i.e., hearths) or examination of existing vandal pits (i.e., middens). Null value indicates no feature.
Value List:

(null value)	estimated	observed	unknown

Field Name: Feature_Plan_Shape
Data Type: Text
Source: FeatureDB
Description: Overall general shape of the feature in plan view.
Value List:

(null value)	circular	linear	unknown
amorphous	crescent	ovate	

Field Name: Feature_Profile_Shape
Data Type: Text
Source: FeatureDB
Description: Overall general shape of the feature in profile.
Value List:

(null value)	flat	piled
amorphous	irregular	pit
basin	lens	unknown

Field Name: Feature_Rock_Tiers
Data Type: Text
Source: FeatureDB
Description: Number of stacked tiers of rock making up feature (usually a hearth)
Value List:

(null value)	double	unknown
none	triple	
single	multiple	

Field Name: Feature_%Dug
Data Type: Text
Source: FeatureDB
Description: Estimate of the approximate percentage of the feature dug, in quartiles.
Value List:

(null value)	51-75%	not tested
1-25%	76-99%	
26-50%	100%	

Field Name: Feature_Rock_ Size
Data Type: Text
Source: FeatureDB
Description: Size range of the majority of burned rocks from a particular provenience. Null if not a feature; unknown if not recorded; n/a if not a burned rock feature.
Value List:

(null value)	3-15 cm	5-10 cm	11-20 cm
1-5 cm	3-18 cm	5-15 cm	21-30 cm
1-15 cm	3-20 cm	5-20 cm	n/a
2-15 cm	4-9 cm	5-25 cm	unknown
2-20 cm	4-12 cm	5-27 cm	
3-7 cm	4-14 cm	5-30 cm	
3-10 cm	4-15 cm	8-10 cm	

Field Name: Feature_Depth
Data Type: Text
Source: FeatureDB
Description: Indicates whether the feature was visible on the surface (not necessarily at the tested location). Null if not a feature.
Value List:

(null value)	surface	buried

Field Name: Feature_Top(cm)
Data Type: Number (integer)
Source: FeatureDB
Description: Depth to the top of the feature in cm in the relevant test unit. Value -9999 indicates unknown (e.g., when the top of the feature was truncated during trenching). Null if not a feature.
Range: 0 to 317; -9999; (null value)

Field Name: Feature_Bottom(cm)
Data Type: Number (integer)
Source: FeatureDB
Description: Depth to the bottom of the feature in cm in the relevant test unit. Value -9999 indicates unknown. Null if not a feature.
Range: 0 to 370; -9999; (null value)

Field Name: Feature_Thickness(cm)
Data Type: Number (integer)
Source: FeatureDB
Description: Feature thickness (bottom - top) in cm in relevant test unit. Value -9999 indicates unknown. Null if not a feature.
Value List: 0-230; -9999; (null value)

Field Name: RS_Num
Data Type: Text
Source: ProvenienceDB
Description: Alphanumeric rockshelter designation indicating the relevant shelter used when more than one shelter is present on a site. If site consists of only one rockshelter, field reads "site." If not a true shelter, field reads "sinkhole," "cave," or "alcove." If relevant provenience is not associated with a shelter, field reads "n/a."
Value List:

A	E	alcove
B	G	cave
C	sinkhole	n/a
D	site	

Field Name: Analytical_Unit
Data Type: Text
Source: ProvenienceDB
Description: Temporal classification of relevant provenience. Note that this may conflict with specific chronological assays or diagnostic artifacts from the provenience if they are discounted due to mixing (see Chapter 4). The value "n/a" was used for material from backhoe trenches.
Value List:

(null value)	Late Prehistoric II	Paleo-Indian
Early Archaic	Middle Archaic	unclassified
Late Archaic	mixed	
Late Prehistoric I	n/a	

Field Name: Quad
Data Type: Text
Source: ProvenienceDB
Description: Relevant quadrant of level.
Value List:

E	SE	n/a
NE	SW	
NW	W	

Field Name: Mesh_Size
Data Type: Text
Source: ProvenienceDB
Description: Mesh size used for recovery of screened proveniences. "Plot" indicated a point-plotted item, and "fabric" indicates flotation recovery. Note, however, that a few proveniences were recovered in their entirety, floated in the laboratory, and then screened through 1/4" mesh for comparability. In these cases, mesh size is 1/4" and process is "float."
Value List:

1/4 "	none
1/8 "	plot
fabric	

Field Name: Process_Type
Data Type: Text
Source: ProvenienceDB
Description: Type of process used to recover material from the provenience.
Value List:

n/a	dry	wet

Field Name: Level_Disturbance
Data Type: Text
Source: ProvenienceDB
Description: Type(s) of disturbance noted in the provenience.
Value List:

erosion	rodent	root/rodent
none	root	shovel test
other	root/erosion	vandalism

Field Name: Level_Human_Bone
Data Type: yes/no
Source: ProvenienceDB
Description: True if human bone was recovered from the level. In most cases, all associated material was immediately reburied at the direction of the Fort Hood base archaeologist.
Value List:

no	yes

Field Name: Unit_Topography
Data Type: Text
Source: ProvenienceDB
Description: Geomorphic context of the relevant test unit at the time of testing. Note that deposits tested in the unit may represent a completely different previous depositional environment. The value "n/a" is used for records that represent placeholders for uninvestigated features.
Value List:

n/a	colluvial toeslope	slope	T2 terrace
alluvial fan	midslope bench	T0 terrace	terrace
cave	Paluxy	T1 terrace	toeslope
colluvial	rockshelter	T1a terrace	unknown
colluvial	sinkhole	T1b terrace	upland

Field Name: Level_Charcoal
Data Type: Text
Source: ProvenienceDB
Description: Character of charcoal noted in the provenience matrix.
Value List:

chunks	flecks	none

Field Name: Volume_(m3)
Data Type: Number (single)
Source: ProvenienceDB
Description: Approximate volume of the relevant provenience in cubic meters. Flotation samples were assumed to be 0.06 cubic meters unless otherwise documented. The sum of all proveniences from a standard level will equal 0.1 m^3. The value 0 denotes an unexcavated provienience or a surface find.
Range: 0 to 0.328

Field Name: N_Burned_Rock
Data Type: Number (integer)
Source: ProvenienceDB
Description: Count of the number of burned rocks in the relevant provenience. Note that this number may be an estimate based on the remaining part of the level when the level w s subdivided (i.e., quads were treated differently)--See "Rock_Accuracy." Flotation samples are usually assumed to have a count of zero.
Range: 0 to 3070

Field Name: KG_Burned_Rock
Data Type: Number (single)
Source: ProvenienceDB
Description: Total mass of burned rocks in the relevant provenience. Note that this number may be an estimate based on the remaining part of the level when the level was subdivided (i.e., quads were treated differently)--See "Rock_Accuracy." Flotation samples are usually assumed to have a mass of zero.
Range: 0 to 294.5

Field Name: Rock_Accuracy
Data Type: Text
Source: ProvenienceDB
Description: Derivation of the values in "N-Burned_Rock" and "KG_Burned_Rock." Estimated values are based on associated proveniences when the proveniece in question was not weighed and counted in the field (e.g., when a level was quad sampled).
Value List:

extrapolated	measured	not recorded	n/a

Field Name: Project Phase
Data Type: Text
Source: SiteDB
Description: Relevant phase of work. BRM Study reported in Trierweiler 1994, Phase 1 reported in Abbott and Trierweiler 1995, and Phase 2 reorted in this work.
Value List:

Phase 1	Phase 2	BRM Study

Field Name: Curation_Number
Data Type: Text
Source: ArtifactDB
Description: Three part accession label consisting of a county designator (1 for Coryell County, 2 for Bell County), Smithsonian site number (minus state and county prefixes), and specimen number assigned to a specific provienience and artifact class, with each part separated by dashes. Example: 1-1038-061 is a unique label assigned to lithic debitage from 41CV1038, TP1, Level 6.
Value List:
Thousands of unique values.

Field Name: From_Float?
Data Type: Yes/No
Source: ArtifactDB
Description: "Yes" if recovered by flotation
Value List:

(null value)	Yes	No

Field Name: Debitage_Size
Data Type: Text
Source: ArtifactDB
Description: Analytical size class of lithic debitage.
Value List:

(null value)	0.5 - 0.9 cm	1.8 - 2.6 cm
< 0.5 cm	0.9 - 1.2 cm	2.6 - 5.2 cm
> 5.2 cm	1.2 - 1.8 cm	

Field Name: Lithic Cortex
Data Type: Text
Source: ArtifactDB
Description: Amount of cortex on debitage.
Value List:

(null value)	indeterminate	partial cortex
all cortex	no cortex	rejuvenation

Field Name: Lithic_Material
Data Type: Text
Source: ArtifactDB
Description: Class of lithic material represented.
Value List:

(null value)	15-Gry/Brn/Grn	Indet Black
01-HL Blue(l)	16-Leona Park	Indet Dk Brown
02-C White	17-Owl Crk Black	Indet Dk Gray
03-AM Gray	18-C Mottled	Indet Lt Brown
04-7 Mile Novac	19-C Dr Gray	Indet Lt Gray
05-Texas Novac	20-C Shell Hash	Indet Misc.
06-HL Tan	21-C Lgt Gray	Indet Mottled
07-Foss Pale Brown	22-C Mott/Flecks	Indet Trans
08-FH Yellow	23-C Mott/Banded	Indet White
09-HL Tr Brown	24-C Br Fossil	Limestone
10-HL Blue	25-C Br Fleck	Obsidian
11-ER Flat	26-C Striated	Quartz
13-ER Flecked	27-C Novaculite	Quartzite
14-FH Gray	28-Table Rock Flat	Sandstone

Field Name: Point_Type
Data Type: Text
Source: ArtifactDB
Description: Type of projectile point. Note that projectile point metrics are not included in this database. See report for projectile point database.
Value List:

(null value)	Caton	Frio	Matamoros	Plainview
Alamagre	Chadbourne	Godley	Montell	Sabinal
Andice	Clifftou	Gower	Morrill	Scallorn
Angostura	Complete	Indeterminate	Nolan	Starr
Barber	Darl	Kent	Other Arrow	Travis
Bonham	Edgewood	Lange	Other Dart	Uvalde
Bulbar Stemmed	Ellis	Langtry	Other Point	Wells
Bulverde	Ensor	Marcos	Palmillas	Wilson

Cameron	Fairland	Marshall	Pedernales	Yarbrough
Castroville	Fresno	Martindale	Perdiz	Young

Field Name: Tool_Type
Data Type: Text
Source: ArtifactDB
Description: Type of lithic, bone, or shell tool represented. Note that many lithic tools from the Phase 1 testing effort have been reclassified to reflect the Phase 2 classification sysem.
Value List:

(null value)	complex scraper	graver	shell pendant
adze	Crushing/Abrading	Hammerstone	side scraper
biface	Denticulate	indeterminate	spokeshave
Bone Awl	drill	late stage biface	stone awl
Bone Needle	Drilled Snail	middle stage biface	uniface
Chopper Type A	early stage biface	Modified Bivalve	utilized
Chopper Type B	edge modified	other tool	wedge
Clear Fork Type A	end scraper	preform	
Clear Fork Type B	finished biface	rejunevation flake	

Field Name: Core_Type
Data Type: Text
Source: ArtifactDB
Description: Type of core represented.
Value List:

(null value)	multiple platform	tested cobble
core fragment	single platform	

Field Name: Ground/Pecked_Stone
Data Type: Text
Source: ArtifactDB
Description: Type of ground stone represented
Value List:

(null value)	mano	metate	sinker

Field Name: Fragment_Type
Data Type: Text
Source: ArtifactDB
Description: Portion recovered of a partial tool or projectile point.
Value List:

(null value)	Complete	Part of blade & stem
Barb	Distal	Proximal
Barb only	Indeterminate	stem and barb
Base only	Longitudinal segment	Stem only
Blade and stem	Medial	tang only
Blade only	Other	Wedge section

Field Name: Breakage
Data Type: Text
Source: ArtifactDB
Description: Type of break on lithic tool or projectile point.
Value List:

(null value)	end shock/imp	Indeterminate	Other
Burinated	End-shock	None	outrepas
Burned	Impact	Notch	Perverse

Field Name: Lithic_Length(mm)
Data Type: Number (Double)
Source: ArtifactDB
Description: Long axis length in mm.
Range: 4.25 to 175; (null value)

Field Name: Lithic_Width(mm)
Data Type: Number (Double)
Source: ArtifactDB
Description: Medial axis length in mm.
Range: 2.77 to 146.51; (null value)

Field Name: Lithic_Thickness(mm)
Data Type: Number (Double)
Source: ArtifactDB
Description: Short axis length in mm.
Range: 1.75 to 91.18; (null value)

Field Name: Worked_Edge#1
Data Type: Number (Double)
Source: ArtifactDB
Description: Length in mm.
Value List: 3.74 to 112.67; (null value)

Field Name: Worked_Edge#2
Data Type: Number (Double)
Source: ArtifactDB
Description: Length in mm.
Value List: 4.5 to 165; (null value)

Field Name: Worked_Edge#3
Data Type: Number (Double)
Source: ArtifactDB
Description: Length in mm.
Value List: 10.25 to 90.06; (null value)

Field Name: Modified_Edges
Data Type: Number (Double)
Source: ArtifactDB
Description: Count of the number of modified edges on a tool.
Range: 1 to 5; (null value)

Field Name: Edge_Preparation
Data Type: Text
Source: ArtifactDB
Description: Type of edge preparation on a tool.
Value List:

(null value)	bifacial	not applicable
unifacial	none	

Field Name: Burned?
Data Type: Yes/No
Source: ArtifactDB
Description: Is relevant object (e.g., bone, lithic tool, etc.) burned?
Value List:

yes	no	(null value)

Field Name: Taxon
Data Type: Text
Source: ArtifactDB
Description: Relevant faunal or floral taxon.
Value List:

(null value)	cf. Crotalus sp.	Leporidae	Quercus sp.
Acer sp.	cf. Didelphis virgin	Leptodea fragilis	Rabdotus sp.
Amblema plicata	cf. Ovis sp.	Lepus californicus	Rodentia (large)
Amblema sp.	Chenopodiacea	Liliaceae	Rodentia (medium)
Ambleminae	Colubridea	Mammalia	Rodentia (sm/med)
Ampelopsis	Cricetidae (medium)	Mammalia (very lg)	Rodentia (small)
Ampelopsis sp.	Cricetidae (small)	Mammalia (lg/vlg)	Rosaceae
Amphibian	Croton sp.	Mammalia (med/lg)	Salicaceae
Antilocapra american	Cyperaceae	Mammalia (medium)	Salicaceae sp.
Anura	Cyrtonaias sp.	Mammalia (sm/med)	Sciuridae
Artiodactyla	Dasypus novemcinctus	Mammalia (small)	Serpentes
Artiodactyla (med)	Didelphis virgiania	Mammalia (micro/sm)	Sigmondon sp.
Aves	Emydidae	Mammalia (micro)	Sus scrofa
Aves (large)	Fabaceae	Megalonaias nervosa	Sylvilagus sp.
Aves (medium)	Falconiformes	Mephitis mephitis	Tayassuidae
Aves (small)	Felis rufus	Mustelidae	Terrapene sp.
Bos/Bison	Galium sp.	Neotoma sp.	Testudinata
Bos	Geomys bursarius	Odocoileus sp.	Toxolasma sp.
Bufo sp.	Homo sapiens	Opuntia sp.	Toxolasma texasensis
Busycon sp.	Juglandaceae	Osteichthyes	Trionyx sp.
Canis sp.	Juglans sp.	Osteichthyes (sm)	Tritigonia verrucosa
Carnivora	Juniperus ashei	Ovis/Capra	Ulmus crassifolia
Carya illinoiensis	Juniperus sp	Paspalum sp.	Ulmus sp.
Carya sp.	Kinosternidae	Poaceae	Unionacea
Castor canadensis	Lampsilinae	Potamilus purpuratus	Unknown
Catharatidae	Lampsilis hydiana	Procyon lotor	Ursus Americanus
Celtis reticulata	Lampsilis sp.	Quadrula apiculata	Vertebrata
Celtis sp.	Lampsilis teres	Quadrula houstonensis	Vicia sp.
cf. Bison bison	Landsnail	Quadrula sp.	Viperidae
cf. capra hircus	Lepisosteus sp.	Quercus fusiformis	

Field Name: Faunal_Element
Data Type: Text
Source: ArtifactDB
Description: Faunal element represented
Value List:

(null value)	Distal phalange	Maxilla	Radial carpal
Accessory carpal	Dorsal vertebra	Metacarpal	Radius
Antler	Epipubic bone	Metacarpal 3	Rib
Astragalus	Femur	Metapodial	Sacrum
Atlas	Fibula	Metatarsal	Scapula
Axis	Fourth carpal	Metatarsal 3	Sesamoid
Calcaneus	Fused 2&3 carpals	Middle phalange	Shell
Carapace	Fused 2&3rd carpal	Neural	Sternum
Carpal	Fused 3&4th carpals	Patella	Thoracic vertebra
Carpal/Tarsal	Fused 3&4th metatar	Pelvis	Tibia
Caudal vertebra	Fused central carpal	Peripheral	Tibiofibula
Cervical Vertebra	Ganoid scale	Permanent tooth	Tibiotarsus
Coracoid	Humerus	Phalange	Tooth
Costal cartilege	Indeterminate	Plastron	Ulna
Cranium	Lateral maleolus	Pleural	Vertebra
Cuneiform	Long bone	Podial	Zygomatic arch
Deciduous tooth	Lumbar Vertebra	Proximal Phalange	
Dermal armor	Mandible	Proximal Sesamoid	

Field Name: Symmetry
Data Type: Text
Source: ArtifactDB
Description: Symmetry of bone or bivalve shell.
Value List:

left	right	axial	unknown	(null value)

Field Name: Bone_Weathering
Data Type: Text
Source: ArtifactDB
Description: Degree of weathering apparent on bone.
Value List:

(null value)	None	Light	Moderate	Marked

Field Name: Bone_Breakage
Data Type: Text
Source: ArtifactDB
Description: Type of break apparent on bone.
Value List:

(null value)	Angular	Indeterminate	Spiral	Unbroken

Field Name: Bone_Cut?
Data Type: Yes/No
Source: ArtifactDB
Description: Is yes if the bone has cutmarks on it, no otherwise, null if record is not a bone.
Value List:

Yes	No	(null value)

Field Name: Plant_Common_Name
Data Type: Text
Source: ArtifactDB
Description: Common name equivalent of plant taxon.
Value List:

(null value)	Hackberry	Milk Vetch	Unknown
American Sycamore	Hardwood	Netleaf Hackberry	Walnut
Ash Juniper	Hickory Wood Type	Oak Wood	Walnut Family
Bedstraw	Indeterminate	Oak Wood Type	White Oak Group
Cedar Elm	Juniper	Pecan	White Oak Wood
Croton	Leguminous Wood	Pepper Vine	White Oak Wood Typ
Diffuse Porous	Lily Family	Plateau Live Oak	Willow Family
Elm	Live Oak Wood Type	Prickly Pear	Willow Group
Goosefoot	Maple	Rose Family Wood	
Grass Family	Mexican Plum	Sedge Family	

Field Name: Plant_Part
Data Type: Text
Source: ArtifactDB
Description: Part of the plant represented by the specimen.
Value List:

(null value)	Flower	plant matl	Twig with pith
Acorn	Fruit	Root	Unknown bulb
Bark	Indeterminate	Seed	vesicular matl
Bulb	Leaf	Seeds	Wood
Culm	Nut	Stem	

Field Name: Dating_Sample
Data Type: Text
Source: ArtifactDB
Description: Type of material dated.
Value List:

(null value)	bone	charcoal
charcoal/soil	snail	

Field Name: Laboratory
Data Type: Text
Source: ArtifactDB
Description: Laboratory to which sample was submitted.
Value List:

(null value)	Carnegie Geophysical	University of Texas
Beta Analytic	Texas A&M	

Field Name: Lab_ID#1
Data Type: Text
Source: ArtifactDB
Description: Sample number assigned by analyzing laboratory. Null if not applicable.

Field Name: Lab_ID#2
Data Type: Text
Source: ArtifactDB
Description: Sample number assigned by additional laboratory, if any. Null if not applicable.

Field Name: Chronometric_Date(BP)
Data Type: Text
Source: ArtifactDB
Description: Age in corrected, uncalibrated years BP. Null if not applicable.

Field Name: C13/C12_Ratio
Data Type: Text
Source: ArtifactDB
Description: Measured $\delta^{13}C$ ratio. Null if not applicable.

Field Name: Epimerization_Ratio
Data Type: Number (Double)
Source: ArtifactDB
Description: Measured amino acid epimerization ratio. Null if not applicable.
Value List:

Field Name: Weight(g)
Data Type: Number (Double)
Source: ArtifactDB
Description: Mass of specimen in grams. Note burned rock weights are given in KG_Rock field.

3.0 ACCESSING THE FORT HOOD DATABASE

This section describes methods of data retrieval from the Fort Hood database. There are two basic options for retrieving data. If you have MICROSOFT ACCESS VERSION 2.0 for WINDOWS or MICROSOFT ACCESS VERSION 7.0 for WINDOWS 95, we recommend that you use these programs for accessing the data. If you do not have MICROSOFT ACCESS installed, the CD-ROM includes a more limited data access engine that allows you to construct SQL (Structured Query Language) queries to retrieve data from the database. The major advantages of using the full version of Access are (1) queries can be designed using the more user-friendly query design features of ACCESS, and (2) all queries can be saved and modified, which greatly simplifies producing a number of similar queries. In the data access engine included on the CD-ROM, queries must be completely reconstructed each time an extraction request is run. However, queries produced with the included application have most of the capabilities of queries in Access, so using the full version is primarily an advantage of convenience.

Both Microsoft Access and the Fort Hood Database Access Engine must access a copy of the database residing on your hard disk. Approximately 25 mb of storage is required for storage, plus at least an additional 25 mb free for database work space.

3.1 USING MICROSOFT ACCESS FOR DATA RETRIEVAL

To use your own copy of ACCESS to retrieve data from the database, follow these steps:

1. Use DOS commands or the Windows File Manager Application to copy the file "FortHood.mdb" from the CD-ROM to your hard disk.

2. Open the database with Access.

3. Construct and run queries as usual. Consult your ACCESS documentation for problems.

3.2 USING THE ACCESS ENGINE ON THE CD-ROM FOR DATA RETRIEVAL

For users who are not registered owners of MICROSOFT ACCESS, the CD-ROM includes a utility program named Fort Hood Database Access that can be used to construct an SQL query to extract data from the database. This program is relatively unforgiving of syntax errors and does not allow for saving and modification of queries; however, it can be used to construct queries that are as versatile as anything that can be done using the full version of ACCESS.

3.2.1 Initial Setup of the Fort Hood DB

The FTHOODDB.MDB runtime application, which is the database access application provided on this CD-ROM, must be installed on your hard disk to access the database. This installation procedure also copies the database file to your hard drive, so it is not necessary to install it separately.

To install the application, insert the CD-ROM into the drive. Now select "Run..." from the "File" menu in the Windows Program Manager. Type in the following command line: **D:\ setup** and hit "OK." (Note: this assumes that your CD is assigned to device D; if your CD drive is assigned to a different drive, then use the appropriate path).

The Setup application will run, installing the database and necessary Access files in the Application Group that you specify.

When Setup is complete, open the program group and double-click the "Fort Hood Database" icon. The database access application will open.

The first time that the application is opened, you need to attach the database file. Follow these steps:

1. When the "Attach" dialog box opens, select "Microsoft Access" as the data source and click "OK."
2. Use the dialog box to select the copy of the FortHood database (FORTHOOD.mdb) and choose "OK." Make sure that you select the copy on your hard drive, not the copy on the CD-ROM.
3. Select the table "HoodDB" and choose "Attach." When the application displays the dialog saying that the table is attached successfully choose "OK" and "Close." The title screen will appear.

3.2.2 Using the Fort Hood Database Application

The Fort Hood Database application is used to construct SQL (structured query language) SELECT queries that allow you to extract information from the database. SQL SELECT queries have the basic form:

SELECT [DISTINCT or DISTINCTROW] [Fields] FROM [Table] IN [Database] WHERE [Criteria]

(NOTE: SQL SELECT queries can also include additional information, such as GROUP BY, HAVING, and ORDER BY clauses, but these options are not supported by the application. Use the application that you export to (i.e., Excel) to sort and group the records, or use the full version of Microsoft Access to search the database).

To extract data, you move through a series of three screens that allow you to (1) select the fields to include in your query (the SELECT clause), (2) define the extraction criteria (the WHERE clause), and (3) examine the finished SQL SELECT query for errors. The FROM clause is inserted automatically.

When you start the application, the title screen will appear. Click the button to continue. The main screen will then appear. It contains two buttons: "Build Query" and "Quit." Click the "Build Query" button to proceed. The field selection screen will appear.

ENTERING FIELDS

The field selection screen consists of a scrolling list that includes the fields available in the database and a destination list that displays selected fields. To add a field to your query, scroll through the "Available Fields" list until the desired field is visible and click on it. It will appear in the destination list in the form TABLE:FIELD. (Note: Do not use the arrow keys on the keyboard to scroll through the lists because each field that is scrolled past will be added to the query). If you accidently add a field that you don't wish to include, click the "Restart Step 1" button to clear the destination list and reselect your fields. When you are done, click "Next Step." The criteria construction screen will appear.

CONSTRUCTING CRITERIA

The criteria construction screen allows you to construct a criterion string to limit records retrieved by the query. A criteria string consists of criterion clauses separated by the words AND and OR. Criterion clauses have the general form:

([TABLE:FIELD] [Operator] [CRITERION])

NOTE: All text critera MUST BE enclosed in quotes.

Operators allowed in queries include:

=	Equal to
>	Greater Than
<	Less Than
>	Greater Than or Equal To
<=	Less Than or Equal To
<>	Not Equal To
Like	Text expressions are similar (see below)
Not Like	Text Expressions are not similar (see below)

The first six operators can be used with both numeric and text fields; however, text use should be performed carefully. In general, the operators "Like" and "Not Like" are probably better to use with text data. These operators are particularly powerful when used in combination with the wildcard characters * [any characters] and ? [any single character]. For example, the following three criteria clauses will all result in the return of data only from 41BL154:

(Sites:SITE_ID = "BL0154")
(Sites:SITE_ID Like "BL0154")
(Sites:SITE_ID Like "*154")

There are also two special operator buttons:

Is Null	The field is blank
Is Not Null	The field is not blank

These buttons enter both the operator (Is or Is Not) and the criterion (Null). Nothing should be typed in the criterion field when these buttons are used. Note that many fields in the database do not contain null values; rather, text or numeric indicators are present (e.g., "n/a," -9999). See the field descriptions above for information on which fields may contain null values.

ORDER OF EVALUATION
Use parentheses to control the order of evaluation in complex criteria strings. The expressions inside inner parentheses will be evaluated first. If parentheses are not used, AND clauses are identified first, followed by OR clauses. For example, consider the strings:

A: (Analytical_Unit Like "Late Ar*) AND (Feature_Type Like "*idden") OR (Feature_Type Like "*ound")

B: ((Analytical_Unit Like "Late Ar*) AND (Feature_Type Like "*idden")) OR (Feature_Type Like "*ound")

C: (Analytical_Unit Like "Late Ar*) AND ((Feature_Type Like "*idden") OR (Feature_Type Like "*ound"))

String A contains no parentheses to force an order of evaluation; consequently, the AND is evaluated first, and the query would return those cases where (1) the analytical unit is Late Archaic and the Feature Type is burned rock midden, or (2) all records where the Feature Type is burned rock mound.

String B contains parentheses that force the AND clause to be evaluated first; the result would be the same as string A.

String C contains parentheses that force the OR clause to be evaluated first; consequently, the query would return all records where (1) the Analytical Unit is Late Archaic, and (2) the Feature type is burned rock midden or burned rock mound.

BUILDING THE CRITERIA STRING
To construct a criteria string, click on the field you want, then on an operator, and then type the criterion into the box. Hit Return twice to add the criterion and the closing parentheses. All parts of the string must be appended sequentially. If you are constructing a complex criteria string containing several different criteria, it is a good idea to map out the parentheses defining the order of preference ahead of time, because you can't go back and add them later. If you make a mistake, click "Restart Step 2." When the Criterion String is complete, click "Done." The confirm screen will open.

CHECKING THE QUERY
Read over the SQL query in the box, checking for unbalanced parentheses, text criteria, and the like. If you spot a problem, click "Start Over" to rebuild the query. Otherwise, press the "Run Query" button. The query will run, and the results will be displayed (note that the Master Screen will be displayed while the query runs, but you won't be able to select anything until the query datasheet is closed). If the database engine encounters a problem, an error message will be displayed and you'll have to rebuild the query.

<u>3.2.3 Exporting the Query Results for use in Other Applications</u>

Once a query has run, you can either print the data, export it to an Excel Spreadsheet, export it as RTF (Rich-Text Format) text, export it as ASCII (MS-DOS) text, or copy from the data sheet to the clipboard for pasting in other applications.

1. To export to an Excel Spreadsheet:

While the datasheet is displayed, choose "Output To..." from the "File" menu. Select Excel and choose OK.

NOTE: EXCEL SPREADSHEETS CAN ONLY ACCEPT 16,384 RECORDS. IF THE RECORD COUNT DISPLAYED AT THE BOTTOM OF THE DATASHEET IS GREATER THAN 16,384 (which is easy to do if debitage data is included in the query) AN ERROR WILL RESULT AND THE DATA WILL NOT BE EXPORTED. MOREOVER, THE

QUERY WILL BE CLOSED. IF THIS HAPPENS, REPEAT THE QUERY AND EXPORT A DIFFERENT WAY (i.e., to text), OR USE OTHER CRITERIA TO LIMIT THE NUMBER OF RECORDS SELECTED.

2. To export as RTF text:

While the datasheet is displayed, choose "Output To..." from the "File" menu. Select RTF (Rich Text Format) and choose OK.

3. To export as ASCII text:

While the datasheet is displayed, choose "Output To..." from the "File" menu. Select MS-DOS text and choose OK.

EXAMPLE QUERIES

Query 1: This query returns the Site ID, Test Pit, Level, Class and Count of material from Bell County sites:

> **SELECT DISTINCTROW HoodDB.SITE_ID, HoodDB.TESTPIT, HoodDB.LEVEL, HoodDB.CLASS, HoodDB.COUNT FROM HoodDB WHERE ((HoodDB.SITE_ID Like "BL*"));**

Because this query is designed to extract all data, it was constructed without the unique records only box checked, and uses the SELECT DISTINCTROW statement. SELECT DISTINCTROW includes all records that fit the criteria, whether the extracted values are the same or not. Thus, it is possible that the extracted records will appear identical, even though the underlying data differs. For example, the query above would be likely to return a number of records where the site, test pit, and level were the same, class was "Lithic Debitage," and count was "1." Each of these records would represent a different lithic material, but the records would appear the same in the extraction because the LithMat field was not included.

Conversely,

Query 2: This query returns a list of features and feature types from all of the sites:

> **SELECT DISTINCT HoodDB.[SITE_ID], HoodDB.[FEATURE_ID], HoodDB.[Feature_Type] FROM HoodDB WHERE ((HoodDB.[Feature_Type] IS NOT LIKE "n/a"));**

Because these features are associated with many different artifact records in the database, the unique values box is checked to prevent the same information from being returned many different times. This is particularly important if you are trying to retrieve provenience-related data, such as excavated volume or burned rock count, which is repeated many times for each provenience.

APPENDIX B

Field Forms

field work done? Y N : QC checked? Y N

FORT HOOD ARCHAEOLOGICAL PROGRAM
1994-1995 NRHP Testing
Excavation Level Record

SITE: ____________ subarea: ____________
Test Pit: ____________ Level: ____________
Recorder: ____________ Date: ____________

PROVENIENCE DESIGNATION
Main PNUM: __________
Other PNUM: __________ describe: ____________
Other PNUM: __________ describe: ____________

ELEVATION cmbd/cmbs	NW	SW	SE	NE
Starting Depth				
Ending Depth				

*** Circle pit datum corner above & on plan*

PLAN VIEW

SUMMARY OF LEVEL:

TECHNIQUES:
arbitrary cultural natural comments: ____________
pick/shovel shovel trowel comments: ____________
1/4" screen 1/8" screen comments: ____________

OBSERVATIONS
Soil Texture: ____________ Color: ____________
Feature: none Fea.# ________ Type: ____________
Charcoal: none flecks chunks // feature non-feature
Disturbance: none root rodent erosion vandal. other: ________

ROCK
Burned Rock: ________ pieces; ________ kg
Other Rock: ________ pieces; ________ kg
comments

ARTIFACTS (type)	Total	Comments *(give PNUM if different than level)*
lithic tools		*types?*
lithics		*material?*
bone		*taxa/elements?*
shell		
historic		*types?*
military/recent		*(do not collect)*

SAMPLES	Feature#	Comments *(give PNUM if different than level)*
charcoal		*amount, size?*
flotation		*volume?*

PHOTOGRAPHS (include video)	film	roll #	shot #	direct.	subject

PROFILED? yes / no

OTHER COMMENTS

Excavated Feature Record

SITE NO.: ____________ **Recorder:** ______________ **Date Begun:** ____________

Feature No.: __________ **Date Completed:** ___________

- Is the feature visible on the surface? yes no
  - If yes, give maximum length (m):__________, and width (m): ______________
  - If no, give *estimated* maximum length (m):__________, and width (m): ___________
- Was the feature 100% excavated? yes no
  - Give excavated length (m):__________, and width (m): ______________
  - The top of the feature is at _______ cm below surface / datum (circle one)
  - The bottom of the feature at _______ cm below surface / datum (circle one)
- List all excavation units (TPs & levels): ______________________________

- <u>Location Within Site</u> (*note* its relation to other features, associated occupation, slope, topography, etc.)

- <u>Excavation Techniques</u> (*describe* the methods used: shovel/trowel; natural/arbitrary; bisected & profiled; fine-screened, etc.)

- <u>Function</u> (*interpret* the feature's intennded use: hearth, roasting pit, post-hole, knapping station, etc.)

- <u>General Observations</u> (*describe* its shape, cross-section, coloration, context, etc.)

- <u>Details of Construction</u> (*describe* rock sizes, orientation, imbrication, matrix, etc.)

- <u>Stratigraphic Position</u> (*note* relation to surface, buried occupation, sediment zone, etc.)

- <u>Evidence of Disturbance</u> (*note* presence and degree of krotavina, erosion, potholes, etc.)

- <u>Associated Artifacts</u> (*note* type and number, *sketch* diagnostics, *note* if not collected?)

- <u>Samples Collected</u> (*note* type [pollen/float/charcoal/rock/etc.], context, possible problems)

- <u>Photographs</u> (*note* film type, roll #, frame #, orientation)

- <u>Attachments</u> ( ) plan sketch ( ) profile ( ) ____________

FORT HOOD ARCHAEOLOGICAL PROGRAM

1993-1994 NRHP TESTING

Field Catalog

SITE NO.: ________ Recorder: ______________ Date: __________

P#	PROVENIENCE HORIZONTAL	PROVENIENCE VERTICAL	CONTENTS	COUNT	COMMENTS

FORT HOOD ARCHAEOLOGICAL PROGRAM
1993-1994 NRHP Testing

Artifact Frequency Distribution

SITE NO.: ____________________ page ___ of ___
Testing dates: ____________________. Crew chief: ______________________

For each test pit, tabulate artifact frequency (from field catalog) by artifact class (columns) and depth (rows). Use zero (0) for none. Use final column under each test pit for other artifacts (note type). Use "+" for items present (per level notes) but not counted. Note counts which include a temporal diagnostic with "*". Note bottom of each pit with a heavy horizontal line. Circle entire level for a test pit if a feature is present. Attach additional sheets as necessary.

	TP#___					TP#___					TP#___					TP#___				
cmbs↓	L	B	S	R		L	B	S	R		L	B	S	R		L	B	S	R	
0-10																				
10-20																				
20-30																				
30-40																				
40-50																				
50-60																				
60-70																				
70-80																				
80-90																				
90-100																				
100-110																				
110-120																				
120-130																				
130-140																				
140-150																				
150-160																				
160-170																				
170-180																				
180-190																				
190-200																				

L = Lithic; B = Bone; S = Shell (bivalve); R = Rock (burned).

FORT HOOD ARCHAEOLOGICAL PROGRAM

1993-1994 NRHP Testing

Artifact Frequency Distribution - page 2

SITE NO.: ____________________ page ____ of ____

Testing dates: ____________________. Crew chief: ______________________

For each test pit, tabulate artifact frequency (from field catalog) by artifact class (columns) and depth (rows). Use zero (0) for none. Use final column under each test pit for other artifacts (note type). Use "+" for items present (per level notes) but not counted. Note counts which include a temporal diagnostic with "*". Note bottom of each pit with a heavy horizontal line. Circle entire level for a test pit if a feature is present. Attach additional sheets as necessary.

	TP#____					TP#____					TP#____					TP#____				
cmbs↓	L	B	S	R		L	B	S	R		L	B	S	R		L	B	S	R	
200-210																				
210-220																				
220-230																				
230-240																				
240-250																				
250-260																				
260-270																				
270-280																				
280-290																				
290-300																				
300-310																				
310-320																				
320-330																				
330-340																				
340-350																				
350-360																				
360-370																				
370-380																				
380-390																				
390-400																				

L = Lithic; B = Bone; S = Shell (bivalve); R = Rock (burned).

FORT HOOD ARCHAEOLOGICAL PROGRAM
1993-1994 NRHP Testing

Artifact Frequency Distribution - page 3

SITE NO.: ____________________ page ___ of ___

Testing dates: ____________________. Crew chief: ______________________

For each test pit, tabulate artifact frequency (from field catalog) by artifact class (columns) and depth (rows). Use zero (0) for none. Use final column under each test pit for other artifacts (note type). Use "+" for items present (per level notes) but not counted. Note counts which include a temporal diagnostic with "*". Note bottom of each pit with a heavy horizontal line. Circle entire level for a test pit if a feature is present. Attach additional sheets as necessary.

	TP#____					TP#____					TP#____					TP#____				
cmbs↓	L	B	S	R		L	B	S	R		L	B	S	R		L	B	S	R	
400-410																				
410-420																				
420-430																				
430-440																				
440-450																				
450-460																				
460-470																				
470-480																				
480-490																				
490-500																				
500-510																				
510-520																				
520-530																				
530-540																				
540-550																				
550-560																				
560-570																				
570-580																				
580-590																				
590-600																				

L = Lithic; B = Bone; S = Shell (bivalve); R = Rock (burned).

FORT HOOD ARCHAEOLOGICAL PROGRAM
1993-1994 NRHP Testing

List of Treatment Units

SITE NO.: ____________________ page ___ of ___

Testing dates: ____________________. Crew chief: ________________________

For each treatment unit, note its type (TP, BHT), number designation , general location, size, and maximum depth. Use the last column to note features and other summary comments. An example is shown at the bottom of this sheet. Precise distance and azimuth should be recorded separately by mapping instruments.

Unit type	Unit #	General location	Dimensions (L x W) (meters)	Ending depth (cmbs)	Comments
EXAMPLE: TP	17	10 m north of drainage cutbank; 5 m west of BRM feature 1; about 30 m northwest of TP5	1 x 1	140	slab hearth F6 at 70-90 cmbs; basal gravels at 140 cmbs

FORT HOOD ARCHAEOLOGICAL PROGRAM

1993-1994 NRHP TESTING

Excavated Feature Record

SITE NO.: ____________ **Recorder:** ______________ **Date Begun:** ____________

Feature No.: __________ **Date Completed:** __________

- Is the feature visible on the surface? yes no
  - If yes, give maximum length (m):__________, and width (m): ____________
  - If no, give *estimated* maximum length (m):__________, and width (m): ____________.
- Was the feature 100% excavated? yes no
  - Give excavated length (m):__________, and width (m): ____________
  - The top of the feature is at ______ cm below surface / datum (circle one)
  - The bottom of the feature at ______ cm below surface / datum (circle one)
- List all excavation units (TPs & levels): ________________________________

- Location Within Site (*note* its relation to other features, associated occupation, slope, topography, etc.)

- Excavation Techniques (*describe* the methods used: shovel/trowel; natural/arbitrary; bisected & profiled; fine-screened, etc.)

- Function (*interpret* the feature's intennded use: hearth, roasting pit, post-hole, knapping station, etc.)

- General Observations (*describe* its shape, cross-section, coloration, context, etc.)

- Details of Construction (*describe* rock sizes, orientation, imbrication, matrix, etc.)

- Stratigraphic Position (*note* relation to surface, buried occupation, sediment zone, etc.)

- Evidence of Disturbance (*note* presence and degree of krotavina, erosion, potholes, etc.)

- Associated Artifacts (*note* type and number, *sketch* diagnostics, *note* i[illegible] not collected?)

- Samples Collected (*note* type [pollen/float/charcoal/rock/etc.], context, possible problems)

- Photographs (*note* film type, roll #, frame #, orientation)

- Attachments ( ) plan sketch ( ) profile ( ) __________

FORT HOOD SITE EVALUATIONS

Quality Control Program - Data Consistency Check

SITE ________ Checked By: __________________ Date: __________

> > > Fill in all blanks and circle Yes or No; explain all "No" answers:

General

____ total TPs recommended; ____ total TPs dug.
____ total BHT recommended; ____ total BHT dug.
____ total features present;____ total features recorded.
explain and differences in above: ____

____

Y N Has all field work been completed as of above date?
excavation completed: __________ by ____________
Trenching/profiling completed: ___ _______ by ____________
Instrument mapping completed: __________ by ____________
Y N Is the site number present on all sheets?

Site sketch map

Y N Is a sketch map included?
Y N Does the sketch map have a scale, north arrow, and site number?
Y N Are all TPs shown on the sketch map?
Y N Are all BHT's shown on the sketch map?
Y N Are all features shown on the sketch map?
Y N Is a photo base included?
Y N Does the photobase have a scale, north arrow, and site number?
Y N Are all TPs, BHTs, and features shown on the photobase?

Trench Records

Y N Is each trench profiled?
Y N Is each trench described?
Y N Are Munsells recorded?
Y N Are samples logged on Form 10?
Y N Are all BHTs and individually treated proveniences assigned PNUMs?

for any "N", explain (give BHT#):____

____

Test Pit Records (Form 8)

___ levels were excavated (Form 19); ___ level records are present.
Y N Are all level records present?

For EACH level record, inspect and verify the following:

Y N PNUM entered?	Y N recorder shown?	Y N date shown?
Y N top & bottom depths shown?	Y N datum circled?	Y N summarized?
Y N techniques circled?	Y N observations made?	Y N feature noted & numbered?
Y N rock weighed?	Y N rock counted?	Y N artifacts counted?
Y N samples noted	Y N photos noted?	Y N profile attached?

for any "N", explain (give TP# & level):____

____

Field Catalog (Form 10)

Y N Does the PNUM log assign/reserve numbers for previous treatment units?
Y N Are all new proveniences assigned PNUMs?
Y N Do PNUMs match Form 8 level records?
Y N Do artifact counts match Form 8 level records?

Feature Records (Form 9)

Y N Does each feature have a separate feature record?

For EACH feature, inspect and verify the following:

Y N site number shown?	Y N recorder shown?	Y N date shown?
Y N dimensions given?	Y N depths given?	Y N TPs indicated?
Y N samples collected?	Y N artifacts noted?	Y N photos noted?

Y N is the feature adequately described and interpreted with all prompts addressed?

Y N profile attached? If Yes:	Y N profile scale shown?	Y N profile direction shown?
	Y N profile described?	Y N profile Munselled?
Y N plan attached? If Yes:	Y N plan scale shown?	Y N north arrow on plan?

for any "N", explain (specify feature):____

Photo Log

____ BW rolls with ____ still shots
____ color slide rolls with ____ still shots
____ videotapes
Y N Does each roll have a single site?
Y N Does each roll have a photo log?
Y N Are logged still shots listed on Form 8 level records?
Y N Are logged still shots listed on Form 9 feature records?
Y N Does each still shot have provenience indicated?
Y N Does each still shot have direction indicated?

Analysis (Form 18)

Y N Is every TP tabulated on Form 18?
Y N Does the number of levels for each TP on Form 18 match that on list of treatment units?
Y N Do the artifact frequencies on Form 18 match those on the level records?
Y N Are zeros used for negative levels?
Y N Are non-counted artifacts noted with an "*"?
Y N Are all levels with features circled?
Y N Is the bottom of each pit noted with a heavy line?

QC RECOMMENDATION

____ Site records are OK as recieved.

____ Site records had minor problems
___ have been corrected by QC officer.
___ have been returned to Crew Chief for correction.

____ Site records had major problems
___ have been returned to Crew Chief for correction.
___ PI notified for policy/procedure evaluation.

Field Exposure Description Form

Profile Designation ______ Date ______
Described by ______ Sampled By ______ Sample Types ______
Location ______ Quadrangle ______ Geologic Unit ______
Nature, texture of deposit ______ Geom. Surface ______
Remarks ______

Zone ____ Depth ______ Horiz ______
Texture: F/M/C Grvly/Sndy/Slty/Cly/Lmy Gravel/Sand/Silt/Clay/Loam
Struct:Mas/Blky/Plty/Colmn/Prism/Gran/Crum VF/F/M/C/VC Wk/Md/Str
Consist: VFr/Fr/Fm/VFm Ls/Sf/SHd/Hd/VHd NSt/SSt/St/VSt NP/SP/P/VP
Reaction N/W/M/S/V Mottles N/F/C/A F/M/C Faint/Dist/Prom
Bdry: Abr/Clr/Grad/Diff Smooth/Wavy/Irreg/Broken Color: ______
CaCO3 Morph: F/C/A None/filam/film/rhiz/nod(f/m/c) Roots: N/F/C/A
Comment: ______

Zone ____ Depth ______ Horiz ______
Texture: F/M/C Grvly/Sndy/Slty/Cly/Lmy Gravel/Sand/Silt/Clay/Loam
Struct:Mas/Blky/Plty/Colmn/Prism/Gran/Crum VF/F/M/C/VC Wk/Md/Str
Consist: VFr/Fr/Fm/VFm Ls/Sf/SHd/Hd/VHd NSt/SSt/St/VSt NP/SP/P/VP
Reaction N/W/M/S/V Mottles N/F/C/A F/M/C Faint/Dist/Prom
Bdry: Abr/Clr/Grad/Diff Smooth/Wavy/Irreg/Broken Color: ______
CaCO3 Morph: F/C/A None/filam/film/rhiz/nod(f/m/c) Roots: N/F/C/A
Comment: ______

Zone ____ Depth ______ Horiz ______
Texture: F/M/C Grvly/Sndy/Slty/Cly/Lmy Gravel/Sand/Silt/Clay/Loam
Struct:Mas/Blky/Plty/Colmn/Prism/Gran/Crum VF/F/M/C/VC Wk/Md/Str
Consist: VFr/Fr/Fm/VFm Ls/Sf/SHd/Hd/VHd NSt/SSt/St/VSt NP/SP/P/VP
Reaction N/W/M/S/V Mottles N/F/C/A F/M/C Faint/Dist/Prom
Bdry: Abr/Clr/Grad/Diff Smooth/Wavy/Irreg/Broken Color: ______
CaCO3 Morph: F/C/A None/filam/film/rhiz/nod(f/m/c) Roots: N/F/C/A
Comment: ______

Zone ____ Depth ______ Horiz ______
Texture: F/M/C Grvly/Sndy/Slty/Cly/Lmy Gravel/Sand/Silt/Clay/Loam
Struct:Mas/Blky/Plty/Colmn/Prism/Gran/Crum VF/F/M/C/VC Wk/Md/Str
Consist: VFr/Fr/Fm/VFm Ls/Sf/SHd/Hd/VHd NSt/SSt/St/VSt NP/SP/P/VP
Reaction N/W/M/S/V Mottles N/F/C/A F/M/C Faint/Dist/Prom
Bdry: Abr/Clr/Grad/Diff Smooth/Wavy/Irreg/Broken Color: ______
CaCO3 Morph: F/C/A None/filam/film/rhiz/nod(f/m/c) Roots: N/F/C/A
Comment: ______

Zone ____ Depth ______ Horiz ______
Texture: F/M/C Grvly/Sndy/Slty/Cly/Lmy Gravel/Sand/Silt/Clay/Loam
Struct:Mas/Blky/Plty/Colmn/Prism/Gran/Crum VF/F/M/C/VC Wk/Md/Str
Consist: VFr/Fr/Fm/VFm Ls/Sf/SHd/Hd/VHd NSt/SSt/St/VSt NP/SP/P/VP
Reaction N/W/M/S/V Mottles N/F/C/A F/M/C Faint/Dist/Prom
Bdry: Abr/Clr/Grad/Diff Smooth/Wavy/Irreg/Broken Color: ______
CaCO3 Morph: F/C/A None/filam/film/rhiz/nod(f/m/c) Roots: N/F/C/A
Comment: ______

Abbreviation Key *Texture*: Fine/Medium/Coarse; Gravelly/Sandy/Silty/Clayey/Loamy; *Structure*: Massive/Blocky/Platy/Columnar/Prismatic/Granular/Crumb; Very Fine/Fine/Medium/Coarse/Very Coarse; Weak/Moderate/Strong; *Consistence*: Very friable/friable/firm/very firm; Loose/soft/slightly hard/hard/very hard; Non-sticky—very sticky; nonplastic—very plastic; *Reaction (HCl)*: None/weak/moderate/strong/violent; *Mottles*: None/few/common/abundant; fine/medium/coarse; faint/distinct/prominent; *Boundary*: Abrupt/Clear/Gradual/Diffuse; *CaCO3 Morphology*: few/common/abundant None/filaments/films/rhizoliths/nodules (fine/medium/coarse)

Zone______ Depth________________ Horiz ________ Texture: F/M/C Grvly/Sndy/Slty/Cly/Lmy Gravel/Sand/Silt/Clay/Loam
Struct:Mas/Blky/Plty/Colmn/Prism/Gran/Crum VF/F/M/C/VC Wk/Md/Str Bdry: Abr/Clr/Grad/Diff Smooth/Wavy/Irreg/Broken
Consist: VFr/Fr/Fm/VFm Ls/Sf/SHd/Hd/VHd NSt/SSt/St/VSt NP/SP/P/VP Roots: None/Few/Common/Abundant Color:____________
Reaction N/W/M/S/V Mottles N/F/C/A F/M/C Faint/Dist/Prom CaCO3 Morph: F/C/A None/filam/film/rhiz/nod(f/m/c)
Comment:____

Zone______ Depth________________ Horiz ________ Texture: F/M/C Grvly/Sndy/Slty/Cly/Lmy Gravel/Sand/Silt/Clay/Loam
Struct:Mas/Blky/Plty/Colmn/Prism/Gran/Crum VF/F/M/C/VC Wk/Md/Str Bdry: Abr/Clr/Grad/Diff Smooth/Wavy/Irreg/Broken
Consist: VFr/Fr/Fm/VFm Ls/Sf/SHd/Hd/VHd NSt/SSt/St/VSt NP/SP/P/VP Roots: None/Few/Common/Abundant Color:____________
Reaction N/W/M/S/V Mottles N/F/C/A F/M/C Faint/Dist/Prom CaCO3 Morph: F/C/A None/filam/film/rhiz/nod(f/m/c)
Comment:____

Zone______ Depth________________ Horiz ________ Texture: F/M/C Grvly/Sndy/Slty/Cly/Lmy Gravel/Sand/Silt/Clay/Loam
Struct:Mas/Blky/Plty/Colmn/Prism/Gran/Crum VF/F/M/C/VC Wk/Md/Str Bdry: Abr/Clr/Grad/Diff Smooth/Wavy/Irreg/Broken
Consist: VFr/Fr/Fm/VFm Ls/Sf/SHd/Hd/VHd NSt/SSt/St/VSt NP/SP/P/VP Roots: None/Few/Common/Abundant Color:____________
Reaction N/W/M/S/V Mottles N/F/C/A F/M/C Faint/Dist/Prom CaCO3 Morph: F/C/A None/filam/film/rhiz/nod(f/m/c)
Comment:____

Zone______ Depth________________ Horiz ________ Texture: F/M/C Grvly/Sndy/Slty/Cly/Lmy Gravel/Sand/Silt/Clay/Loam
Struct:Mas/Blky/Plty/Colmn/Prism/Gran/Crum VF/F/M/C/VC Wk/Md/Str Bdry: Abr/Clr/Grad/Diff Smooth/Wavy/Irreg/Broken
Consist: VFr/Fr/Fm/VFm Ls/Sf/SHd/Hd/VHd NSt/SSt/St/VSt NP/SP/P/VP Roots: None/Few/Common/Abundant Color:____________
Reaction N/W/M/S/V Mottles N/F/C/A F/M/C Faint/Dist/Prom CaCO3 Morph: F/C/A None/filam/film/rhiz/nod(f/m/c)
Comment:____

Zone______ Depth________________ Horiz ________ Texture: F/M/C Grvly/Sndy/Slty/Cly/Lmy Gravel/Sand/Silt/Clay/Loam
Struct:Mas/Blky/Plty/Colmn/Prism/Gran/Crum VF/F/M/C/VC Wk/Md/Str Bdry: Abr/Clr/Grad/Diff Smooth/Wavy/Irreg/Broken
Consist: VFr/Fr/Fm/VFm Ls/Sf/SHd/Hd/VHd NSt/SSt/St/VSt NP/SP/P/VP Roots: None/Few/Common/Abundant Color:____________
Reaction N/W/M/S/V Mottles N/F/C/A F/M/C Faint/Dist/Prom CaCO3 Morph: F/C/A None/filam/film/rhiz/nod(f/m/c)
Comment:____

Zone______ Depth________________ Horiz ________ Texture: F/M/C Grvly/Sndy/Slty/Cly/Lmy Gravel/Sand/Silt/Clay/Loam
Struct:Mas/Blky/Plty/Colmn/Prism/Gran/Crum VF/F/M/C/VC Wk/Md/Str Bdry: Abr/Clr/Grad/Diff Smooth/Wavy/Irreg/Broken
Consist: VFr/Fr/Fm/VFm Ls/Sf/SHd/Hd/VHd NSt/SSt/St/VSt NP/SP/P/VP Roots: None/Few/Common/Abundant Color:____________
Reaction N/W/M/S/V Mottles N/F/C/A F/M/C Faint/Dist/Prom CaCO3 Morph: F/C/A None/filam/film/rhiz/nod(f/m/c)
Comment:____

Zone______ Depth________________ Horiz ________ Texture: F/M/C Grvly/Sndy/Slty/Cly/Lmy Gravel/Sand/Silt/Clay/Loam
Struct:Mas/Blky/Plty/Colmn/Prism/Gran/Crum VF/F/M/C/VC Wk/Md/Str Bdry: Abr/Clr/Grad/Diff Smooth/Wavy/Irreg/Broken
Consist: VFr/Fr/Fm/VFm Ls/Sf/SHd/Hd/VHd NSt/SSt/St/VSt NP/SP/P/VP Roots: None/Few/Common/Abundant Color:____________
Reaction N/W/M/S/V Mottles N/F/C/A F/M/C Faint/Dist/Prom CaCO3 Morph: F/C/A None/filam/film/rhiz/nod(f/m/c)
Comment:____

Zone______ Depth________________ Horiz ________ Texture: F/M/C Grvly/Sndy/Slty/Cly/Lmy Gravel/Sand/Silt/Clay/Loam
Struct:Mas/Blky/Plty/Colmn/Prism/Gran/Crum VF/F/M/C/VC Wk/Md/Str Bdry: Abr/Clr/Grad/Diff Smooth/Wavy/Irreg/Broken
Consist: VFr/Fr/Fm/VFm Ls/Sf/SHd/Hd/VHd NSt/SSt/St/VSt NP/SP/P/VP Roots: None/Few/Common/Abundant Color:____________
Reaction N/W/M/S/V Mottles N/F/C/A F/M/C Faint/Dist/Prom CaCO3 Morph: F/C/A None/filam/film/rhiz/nod(f/m/c)
Comment:____

General Comments____
____

APPENDIX C

Snail Data

Context	Sample No.	A/I	Age	+5%	-5%		Interpreted Age	Age	+5%	-5%	Interpretated Age
			per Ellis et al. 1995					per Abbott and Treirweiler 1995			
41CV115B	cd-88	0.0212	383	422	345	*		516	566	467	
TP3	cd-84	0.0223	423	463	383	*		563	620	516	
20-30 cm	cd-83	0.023	448	490	407	*		600	654	547	
	cd-89	0.0235	466	509	424	*		624	678	569	
	cd-87	0.024	485	528	441	*		647	703	591	
	cd-91	0.0271	597	646	548			792	855	728	
	cd-90	0.0288	658	710	606			871	938	804	
	cd-85	0.0533	1,545	1,642	1,449		441 BP	2,014	2,139	1,890	591 BP
41CV115B	cd-80	0.0293	676	730	623	*		894	963	826	
TP3	cd-77	0.0294	680	733	627	*		899	968	830	
50-60 cm	cd-82	0.0478	1,346	1,433	1,260			1,758	1,869	1,646	
	cd-78	0.0785	2,458	2,600	2,316			3,190	3,374	3,007	
	cd-81	0.0896	2,860	3,022	2,698			3,708	3,917	3,499	
	cd-75	0.0901	2,878	3,041	2,715			3,732	3,942	3,522	
	cd-79	0.18	6,133	6,459	5,807			7,927	8,347	7,507	
	cd-76	0.289	10,080	10,603	9,557		678 BP	13,014	13,689	12,340	897 BP
41CV115B	cd-95	0.0231	452	494	410	*		605	659	551	
TP3	cd-97	0.0235	466	509	424	*		624	678	569	
80-90 cm	cd-98	0.0286	651	703	599			862	928	795	
	cd-93	0.0292	673	726	620			890	958	821	
	cd-96	0.217	7,473	7,866	7,080			9,654	10,160	9,148	
	cd-92	0.33	11,565	12,162	10,967			14,928	15,698	14,158	
	cd-94	0.377	13,267	13,949	12,584			17,121	18,001	16,241	
	cd-99	0.947	33,906	35,621	32,192		459 BP	43,723	45,933	41,513	614 BP
41CV481	cd-107	0.0465	1,299	1,383	1,215	*		1,697	1,805	1,588	
TP1	cd-103	0.0477	1,343	1,429	1,256	*		1,753	1,864	1,642	
20-30 cm	cd-102	0.0533	1,545	1,642	1,449			2,014	2,139	1,890	
"feature"	cd-106	0.0599	1,784	1,893	1,676			2,322	2,462	2,183	
	cd-104	0.0644	1,947	2,064	1,831			2,532	2,683	2,382	
	cd-101	0.0681	2,081	2,205	1,958			2,705	2,864	2,546	
	cd-105	0.0682	2,085	2,208	1,962			2,710	2,869	2,551	
	cd-100	0.36	12,651	13,303	11,999		1321 BP	16,328	17,168	15,488	1,725 BP
41CV481	cd-112	0.0314	752	809	696	*		992	1,066	919	
TP1	cd-114	0.0331	814	874	754	*		1,072	1,149	994	
90-100 cm	cd-109	0.0333	821	882	761	*		1,081	1,159	1,003	
colluv	cd-113	0.0346	868	931	806	*		1,142	1,222	1,061	
	cd-111	0.0347	872	935	809	*		1,146	1,227	1,065	
	cd-110	0.0369	952	1,018	885	*		1,249	1,335	1,163	
	cd-108	0.0403	1,075	1,148	1,002	*		1,408	1,502	1,314	
	cd-115	0.0683	2,089	2,212	1,965		879 BP	2,714	2,874	2,555	1,156 BP
41CV481	cd-117	0.0585	1,734	1,840	1,628	*		2,257	2,394	2,120	
TP1	cd-119	0.0633	1,908	2,022	1,793	*		2,481	2,629	2,333	
200-210cm	cd-116	0.0646	1,955	2,072	1,838	*		2,542	2,692	2,391	
feature	cd-124	0.0656	1,991	2,110	1,872	*		2,588	2,741	2,435	
	cd-120	0.0691	2,118	2,243	1,993	*		2,752	2,913	2,590	
	cd-118	0.073	2,259	2,391	2,127	*		2,934	3,104	2,763	
	cd-121	0.0735	2,277	2,410	2,144	*		2,957	3,129	2,786	
	cd-123	0.0817	2,574	2,722	2,426		2035 BP	3,340	3,530	3,149	2,644 BP
41CV481	cd-127	0.0611	1,828	1,939	1,717	*		2,378	2,521	2,236	
TP1	cd-128	0.0635	1,915	2,030	1,800	*		2,490	2,639	2,342	
240-250cm	cd-125	0.0663	2,016	2,136	1,896	*		2,621	2,776	2,466	
colluvium	cd-129	0.118	3,888	4,102	3,675			5,034	5,309	4,758	
	cd-130	0.138	4,612	4,862	4.363			5,967	6,289	5,645	
	cd-126	0.205	7,039	7,410	6,667		1920 BP	9,094	9,572	8,616	2,497 BP
41CV481	cd-132	0.0549	1,603	1,703	1,504	*		2,089	2,217	1,961	
TP1	cd-134	0.056	1,643	1,745	1,542	*		2,140	2,271	2,010	
320-330 cm	cd-135	0.0612	1,832	1,942	1,721	*		2,383	2,526	2,240	
feature	cd-133	0.062	1,861	1,973	1,748	*		2,420	2,565	2,276	
	cd-137	0.0635	1,915	2,030	1,800	*		2,490	2,639	2,342	
	cd-131	0.2	6,857	7,220	6,495			8,861	9,327	8,394	
	cd-136	0.215	7,401	7,790	7,011			9,561	10,062	9,059	
	cd-138	0.6	21,341	22,428	20,255		1771 BP	27,528	28,929	26,128	2,305 BP
41 CV184	cd-139	0.045	1,245	1,326	1,163	*		1,627	1,732	1,522	
TP2	cd-140	0.0464	1,296	1,380	1,212	*		1,692	1,801	1,584	
30-40	cd-141	0.0436	1,194	1,273	1,115	*		1,562	1,663	1,460	
	cd-143	0.0436	1,194	1,273	1,115	*		1,562	1,663	1,460	
	cd-144	0.045	1,245	1,326	1,163	*		1,627	1,732	1,522	
	cd-191	0.0412	1,107	1,182	1,033	*	1214 BP	1,450	1,546	1,353	1,587 BP

Context	Sample No.	A/I	Age	+5%	-5%		Interpreted Age	Age	+5%	-5%	Interpretated Age
			per Ellis et al. 1995					per Abbott and Tivirweiler 1995			
41CV184	cd-145	0.736	26,266	27,599	24,934			33,876	35,593	32,158	
TP2	cd-192	0.0591	1,756	1,863	1,649	*		2,285	2,423	2,147	
80-90 cm	cd-193	0.0915	2,929	3,094	2,763			3,797	4,011	3,584	
	cd-194	0.0765	2,316	2,524	2,247			3,097	3,276	2,919	
	cd-206	0.18	6,133	6,459	5,807		1756 BP	7,927	8,347	7,507	2,285 BP
41CV184	cd-223	0.0882	2,809	2,969	2,650	*		3,643	3,849	3,437	
TP2	cd-222	0.0943	3,030	3,201	2,859	*		3,928	4,148	3,708	
120-130 cm	cd-219	0.0946	3,041	3,212	2,870	*		3,942	4,163	3,721	
	cd-220	0.141	4,721	4,976	4,466			6,107	6,436	5,778	
	cd-221	0.187	6,387	6,725	6,048			8,254	8,690	7,818	
	cd-224	0.232	8,016	8,436	7,596		2960 BP	10,354	10,896	9,813	3,838 BP
41CV184	cd-225	0.084	2,657	2,809	2,505	*		3,447	3,643	3,251	
TP2	cd-226	0.0878	2,795	2,954	2,636	*		3,624	3,829	3,420	
150-160 cm	cd-227	0.0917	2,936	3,102	2,770	*		3,806	4,020	3,592	
	cd-230	0.0963	3,103	3,277	2,928	*		4,021	4,246	3,796	
	cd-228	0.11	3,599	3,798	3,399			4,660	4,917	4,404	
	cd-229	0.114	3,743	3,950	3,537		2873 BP	4,847	5,113	4,581	[illegible],725 BP
41CV184	cd-246	0.103	3,345	3,532	3,159	*		4,334	4,574	4,093	
TP2	cd-241	0.104	3,381	3,570	3,193	*		4,380	4,623	4,138	
190-200 cm	cd-242	0.104	3,381	3,570	3,193	*		4,380	4,623	4,138	
	cd-244	0.107	3,490	3,684	3,296	*		4,520	4,770	4,271	
	cd-243	0.11	3,599	3,798	3,399	*		4,660	4,917	4,404	
	cd-245	0.135	4,504	4,748	4,259		3345 BP	5,827	6,142	5,512	4,455 BP
41CV184 TP2 240-250 cm	cd-247	0.119	3,924	4,1[illegible]0	3,709	*	3924 BP	5,080	5,358	4,803	5,080 BP
41CV184	cd-248	0.129	4,287	4,520	4,053			5,547	5,848	5,246	
TP2	cd-259	0.0987	3,189	3,368	3,011	*		4,133	4,363	3,903	
250-260 cm	cd-260	0.104	3,381	3,570	3,193	*	3285 BP	4,380	4,623	4,138	4,257 BP
41CV88	cd-269	0.0547	1,596	1,695	1,497	*		2,080	2,207	1,952	
TP2	cd-268	0.0554	1,622	1,722	1,521	*		2,112	2,242	1,983	
120-130 cm	cd-271	0.0579	1,712	1,817	1,607	*		2,229	2,364	2,094	
	cd-270	0.0586	1,737	1,844	1,631	*		2,262	2,398	2,125	
	cd-267	0.0604	1,803	1,912	1,693	*		2,346	2,487	2,205	
	cd-273	0.0636	1,918	2,034	1,803			2,495	2,643	2,347	
	cd-266	0.069	2,114	2,239	1,989			2,747	2,908	2,586	
	cd-272	0.079	2,476	2,619	2,333		1694 BP	3,214	3,398	3,029	2,206 BP
41CV378	cd-280	0.186	6,351	6,687	6,014	*		8,207	8,641	7,773	
TP1	cd-281	0.199	6,821	7,182	6,461	*		8,814	9,278	8,350	
110-120 cm	cd-276	0.24	8,306	8,740	7,871			10,727	11,288	10,167	
	cd-277	0.246	8,523	8,969	8,078			11,008	11,582	10,433	
	cd-275	0.261	9,066	9,539	8,594			11,708	12,317	11,099	
	cd-279	0.267	9,284	9,767	8,800			11,988	12,611	11,365	
	cd-278	0.352	12,361	12,999	11,724			15,954	16,776	15,133	
	cd-274	0.511	18,119	19,044	17,194		6586 BP	23,375	24,567	22,182	8,511 BP
41CV478	cd-291	0.16	5,409	5,699	5,119	*		6,994	7,367	6,621	
TP4	cd-282	0.178	6,061	6,383	5,739			7,834	8,249	7,419	
40-45 cm	cd-286	0.186	6,351	6,687	6,014			8,207	8,641	7,773	
	cd-290	0.203	6,966	7,334	6,599			9,001	9,474	8,527	
	cd-285	0.24	8,306	8,740	7,871			10,727	11,288	10,167	
	cd-287	0.28[illegible]	9,791	10,299	9,282			12,641	13,297	11,985	
	cd-283	0.376	13,230	13,911	12,550			17,075	17,952	16,197	
	cd-284	0.429	15,150	15,926	14,373		5409 BP	19,548	20,549	18,547	6,994 BP
41CV478	cd-299	0.135	4,504	4,748	4,259	*		5,827	6,142	5,512	
TP4	cd-297	0.139	4,649	4,900	4,397	*		6,014	6,358	5,690	
70-80 cm	cd-293	0.144	4,830	5,090	4,569	*		6,247	6,583	5,911	
	cd-296	0.159	5,373	5,661	5,085			6,947	7,318	6,576	
	cd-292	0.163	5,518	5,813	5,223			7,134	7,514	6,754	
	cd-295	0.169	5,735	6,041	5,429			7,414	7,808	7,020	
	cd-298	0.187	6,387	6,725	6,048			8,254	8,690	7,818	
	cd-294	0.202	6,930	7,296	6,564		4661 BP	8,954	9,425	8,483	6,029 BP
41CV1378	cd-314	0.0913	2,921	3,087	2,756	*		3,788	4,001	3,575	
TP1	cd-315	0.0977	3,153	3,330	2,976	*		4,086	4,314	3,858	
40-50 cm	cd-313	0.101	3,273	3,456	3,090	*		4,240	4,476	4,005	
	cd-310	0.105	3,418	3,608	3,227	*		4,427	4,672	4,182	
	cd-300	0.107	3,490	3,684	3,296	*		4,520	4,770	4,271	
	cd-312	0.108	3,526	3,722	3,331	*		4,567	4,819	4,315	
	cd-301	0.12	3,961	4,178	3,743			5,127	5,407	4,847	
	cd-311	0.133	4,431	4,672	4,191		3297 BP	5,734	6,044	5,474	4,272 BP

Context	Sample No.	A/I	Age	+5%	-5%		Interpreted Age	Age	+5%	-5%	Interpretated Age	
			per Ellis et al. 1995					per Abbott and Treirweiler 1995				
41CV1403	cd-316	0.136	4,540	4,786	4,294	*		5,874	6,191	5,557		
TP2	cd-320	0.147	4,938	5,205	4,672	*		6,387	6,730	6,044		
20-30 cm	cd-319	0.148	4,975	5,243	4,707	*		6,434	6,779	6,089		
	cd-323	0.166	5,626	5,927	5,326			7,274	7,661	6,887		
	cd-317	0.177	6,025	6,345	5,704			7,787	8,200	7,374		
	cd-324	0.177	6,025	6,345	5,704			7,787	8,200	7,374		
	cd-318	0.226	7,799	8,208	7,390			10,074	10,601	9,547		
	cd-322	0.819	29,271	30,754	27,789		4818 BP	37,749	39,660	35,838	6,232 BP	
41CV1403	cd-332	0.0922	2,954	3,121	2,787	*		3,830	4,045	3,615		
TP1	cd-325	0.108	3,526	3,722	3,331			4,567	4,819	4,315		
40-50 cm	cd-326	0.121	3,997	4,216	3,778			5,174	5,456	4,891		
	cd-328	0.13	4,323	4,558	4,087			5,594	5,897	5,291		
	cd-329	0.134	4,468	4,710	4,225			5,781	6,093	5,468		
	cd-330	0.177	6,025	6,345	5,704			7,787	8,200	7,374		
	cd-331	0.189	6,459	6,801	6,117			8,347	8,788	7,906		
	cd-327	0.455	16,091	16,915	15,267		2954 BP	20,761	21,823	19,700	3,830 BP	
MULTIPLE ASSAYS ON INDIVIDUAL SHELLS												
Shell 1	cd-76	0.289	10,080	10,603	9.557			13,014	13,689	12,340		lip & last 1/4 of body whorl
	cd-183	0.34	11,927	12,542	11,311			15,394	16,188	14,601		body whorl, opposite lip
	cd-184	0.303	10,587	11,136	10,039			13,668	14,375	12,961		penultimate whorl, above lip
Shell 2	cd-77	0.0294	680	733	627			899	968	830		lip & last 1/4 of body whorl
	cd-185	0.0307	727	783	672			960	1,031	888		body whorl, opposite lip
	cd-186	0.0332	818	878	758			1,076	1,154	999		penultimate whorl, above lip
shell 3	cd-80	0.0293	676	730	623			894	963	826		lip & last 1/4 of body whorl
	cd-187	0.031	738	794	682			974	1,046	901		body whorl, opposite lip
	cd-188	0.0321	778	836	720			1,025	1,100	950		penultimate whorl, above lip
shell 4	cd-82	0.0478	1,346	1,433	1,260			1,758	1,869	1,646		lip & last 1/4 of body whorl
	cd-189	0.0362	926	992	861			1,216	1,301	1,132		body whorl, opposite lip
	cd-190	0.0366	941	1,007	875			1,235	1,320	1,150		penultimate whorl, above lip
shell 5	cd-291	0.16	5,409	5,699	5,119			6,994	7,367	6,621		
	cd-381	0.159	5,373	5,661	5.085			6,947	7,318	6,576		
	average	0.16	5,409	5,699	5,119			6,994	7,367	6,621		
shell 6	cd-298	0.187	6,387	6,725	6,048			8,254	8,690	7,818		
	cd-382	0.2	6,857	7,220	6,495			8,861	9,327	8,394		
	average	0.194	6,640	6,991	6,289			8,581	9,033	8,122		
shell 7	cd-299	0.135	4,504	4,748	4,259			5,827	6,142	5,512		
	cd-383	0.137	4,576	4,824	4,328			5,921	6,240	5,601		
	average	0.136	4,540	4,786	4,294			5,874	6,191	5,557		
shell 8	cd-315	0.0977	3,153	3,330	2,976			4,086	4,314	3,858		
	cd-384	0.106	3,454	3,646	3,262			4,474	4,721	4,226		
	average	0.102	3,309	3,494	3,124			4,287	4,525	4,049		
shell 9	cd-328	0.13	4,323	4,558	4,087			5,594	5,897	5,291		
	cd-385	0.142	4,757	5,014	4,500			6,154	6,485	5,823		
	average	0.136	4,540	4,786	4,294			5,874	6,191	5,557		
shell 10	cd-332	0.0922	2,954	3,121	2,787			3,830	4,045	3,615		
	cd-386	0.086	2,730	2,885	2,574			3,540	3,741	3,340		
	average	0.089	2,838	2,999	2,677			3,680	3,888	3,473		
BL154	cb-373	0.0799	2,509	2,653	2,364	*		3,256	3,442	3,069		
Unit 3	cb-377	0.0809	2,545	2,691	2,398	*		3,302	3,491	3,114		
70-93cmbs	cb 372	0.082	2,585	2,733	2,436	*		3,354	3,545	3,162		
colluvium	cb-374	0.1	3,236	3,418	3,055			4,194	4,427	3,960		
under midden	cb-371	0.122	4,033	4,254	3,812			5,221	5,505	4,936		
	cb-375	0.132	4,395	4,634	4,156			5,687	5,995	5,379		
	cb-376	0.132	4,395	4,634	4,156			5,687	5,995	5,379		
	cb-370	0.256	8,885	9,349	8,422		2546 BP	11,474	12,072	10,877	3304 BP	
BL198	cc-2	0.0754	2,346	2,482	2,209			3,046	3,222	2,870		
TP2	cc-1	0.153	5,156	5,433	4,879	*		6,667	7,024	6,310		
level 3	cc-6	0.158	5,337	5,623	5,051	*		6,901	7,269	6,532		
Fea 2	cc-4	0.17	5,771	6,079	5,463	*		7,461	7,857	7,064		
BRM	cc-5	0.378	13,303	13,987	12,619			17,168	18,050	16,286		
	cc-3	1.113	39,917	41,932	37,902		5421 BP	51,470	54,067	48,873	7009 BP	

Context	Sample No.	A/I	Age	+5%	-5%		Interpreted Age	Age	+5%	-5%	Interpretated Age
			per Ellis et al. 1995					per Abbott and Trierweiler 1995			
BL168	cc-12	0.0399	1,060	1,133	988	•		1,389	1,482	1,296	
TP2	cc-7	0.0449	1,241	1,323	1,160	•		1,622	1,727	1,518	
Level 2	cc-8	0.053	1,535	1,631	1,439	•		2,000	2,124	1,877	
Shelter E	cc-10	0.0667	2,031	2,151	1,910			2,640	2,795	2,484	
	cc-9	0.0723	2,233	2,364	2,103			2,901	3,070	2,732	
	cc-11	0.156	5,264	5,547	4,982		1279 BP	6,807	7,171	6,443	1671 BP
BL198	cb-411	0.014	122	148	97			180	213	148	
TP1 level 5	cb-412	0.0143	133	159	107			194	228	161	
Fea 1	cb-409	0.0768	2,396	2,535	2,257	•		3,111	3,290	2,932	
BRM	cb-413	0.0791	2,480	2,623	2,337	•		3,218	3,403	3,034	
	cb-408	0.0854	2,708	2,862	2,553	•		3,512	3,712	3,313	
	cb-410	0.0863	2,740	2,897	2,584	•		3,554	3,756	3,353	
	cb-414	0.119	3,924	4,140	3,709			5,080	5,358	4,803	
	cb-407	0.18	6,133	6,459	5,807		2551 BP	7,927	8,347	7,507	3349 BP
BL470	cb-422	0.0611	1,828	1,939	1,717	•		2,378	2,521	2,236	
TP2 level 12	cb-418	0.0727	2,248	2,380	2,116			2,920	3,089	2,750	
alluvium	cb-416	0.0798	2,505	2,650	2,361			3,251	3,437	3,065	
	cb-419	0.0943	3,030	3,201	2,859			3,928	4,148	3,708	
	cb-417	0.0974	3,142	3,319	2,966			4,072	4,300	3,845	
	cb-420	0.0982	3,171	3,349	2,994			4,110	4,339	3,881	
	cb-415	0.101	3,273	3,456	3,090			4,240	4,476	4,005	
	cb-421	0.135	4,504	4,748	4,259		1828 BP	5,827	6,142	5,512	2378 BP
BL532	cb-430	0.107	3,490	3,684	3,296	•		4,520	4,770	4,271	
TP4 level 4	cb-429	0.127	4,214	4,444	3,984			5,454	5,750	5,157	
colluvium	cb-423	0.134	4,468	4,710	4,225			5,781	6,093	5,468	
	cb-425	0.138	4,612	4,862	4,363			5,967	6,289	5,645	
	cb-426	0.164	5,554	5,851	5,257			7,181	7,563	6,798	
	cb-427	0.184	6,278	6,611	5,945			8,114	8,543	7,685	
	cb-428	0.197	6,749	7,106	6,392			8,721	9,180	8,261	
	cb-424	0.924	33,074	34,746	31,401		3490 BP	42,649	44,805	40,493	4520 BP
BL532	cb-434	0.0776	2,425	2,566	2,285			3,148	3,329	2,967	
TP6 level 8	cb-437	0.0945	3,037	3,208	2,866	•		3,937	4,158	3,717	
colluvium	cb-432	0.0983	3,175	3,353	2,997	•		4,114	4,344	3,885	
	cb-433	0.1	3,236	3,418	3,055	•		4,194	4,427	3,960	
	cb-439	0.1	3,236	3,418	3,055	•		4,194	4,427	3,960	
	cb-431	0.101	3,273	3,456	3,090	•		4,240	4,476	4,005	
	cb-435	0.102	3,309	3,494	3,124	•		4,287	4,525	4,049	
	cb-436	0.106	3,454	3,646	3,262	•	3246 BP	4,474	4,721	4,226	4206 BP
BL532	cb-447	0.0413	1,111	1,186	1,036	•		1,454	1,551	1,358	
TP5 level 6	cb-445	0.0473	1,328	1,414	1,243	•		1,734	1,845	1,624	
colluvium	cb-440	0.051	1,462	1,555	1,370	•		1,907	2,026	1,788	
	cb-446	0.0567	1,669	1,771	1,566			2,173	2,305	2,041	
	cb-444	0.0674	2,056	2,178	1,934			2,672	2,830	2,515	
	cb-442	0.0778	2,433	2,573	2,292			3,158	3,339	2,976	
	cb-441	0.086	2,730	2,885	2,574			3,540	3,741	3,340	
	cb-443	0.253	8,777	9,235	8,319		1300 BP	11,334	11,925	10,744	1699 BP
BL532	cb-448	0.119	3,924	4,140	3,709	•		5,080	5,358	4,803	
TP3	cb-454	0.119	3,924	4,140	3,709	•		5,080	5,358	4,803	
Level 3	cb-455	0.132	4,395	4,634	4,156			5,687	5,995	5,379	
colluvium	cb-449	0.134	4,468	4,710	4,225			5,781	6,093	5,468	
	cb-452	0.166	5,626	5,927	5,326			7,274	7,661	6,887	
	cb-456	0.168	5,699	6,003	5,395			7,367	7,759	6,975	
	cb-476	0.562	19,966	20,983	18,948			25,755	27,066	24,444	
	cb-451	0.679	24,202	25,431	22,973		3924 BP	31,215	32,800	29,631	5080 BP
BL433	cb-481	0.0251	524	570	479			698	757	640	
TP2	cb-479	0.032	774	832	715	•		1,020	1,095	946	
Level 3	cb-477	0.0569	1,676	1,779	1,573			2,182	2,315	2,050	
shelter	cb-458	0.104	3,381	3,570	3,193			4,380	4,623	4,138	
	cb-459	0.217	7,473	7,866	7,080			9,654	10,160	9,148	
	cb-478	0.228	7,871	8,284	7,459			10,167	10,699	9,635	
	cb-482	0.302	10,551	11,098	10,004			13,621	14,326	12,916	
	cb-480	0.554	19,676	20,679	18,673		774 BP	25,382	26,674	24,089	1020 BP
BL513	cb-484	0.0579	1,712	1,817	1,607	•		2,229	2,364	2,094	
TP1	cb-485	0.0622	1,868	1,980	1,755	•		2,430	2,575	2,285	
Level 7	cb-500	0.0648	1,962	2,079	1,845	•		2,551	2,702	2,400	
terrace	cb-503	0.0654	1,984	2,102	1,865	•		2,579	2,732	2,426	
alluvium	cb-487	0.0665	2,023	2,144	1,903	•		2,630	2,786	2,475	
	cb-501	0.0702	2,157	2,285	2,030	•		2,803	2,967	2,639	
	cb-486	0.0716	2,208	2,338	2,079	•		2,868	3,035	2,701	
	cb-502	0.0775	2,422	2,562	2,281	•	2042 BP	3,144	3,325	2,963	2654 BP

Context	Sample No.	A/I	Age	+5%	-5%		Interpreted Age	Age	+5%	-5%	Interpretated Age
			per Ellis et al. 1995					per Abbott and Trairweiler 1995			
BL754	cb-506	0.0175	249	281	217	*		344	384	303	
TP2	cb-507	0.0175	249	281	217	*		344	384	303	
Level 4	cb-508	0.0178	260	292	228	*		358	399	316	
shelter	cb-509	0.0187	293	326	259	*		400	443	356	
	cb-505	0.0211	380	418	341	*		512	561	462	
	cb-504	0.0235	466	509	424	*		624	678	569	
	cb-511	0.0312	745	802	689			983	1,056	910	
	cb-510	0.0342	854	916	792			1,123	1,203	1,043	
	cb-521	0.0462	1,288	1,372	1,205			1,683	1,791	1,575	
	cb-520	0.049	1,390	1,479	1,301			1,814	1,928	1,699	
	cb-523	0.0564	1,658	1,760	1,556			2,159	2,291	2,027	
	cb-522	0.181	6,170	6,497	5,842		316 BP	7,974	8,396	7,552	430 BP
BL740	cb-512	0.0209	372	410	334	*		502	551	453	
TP2	cb-514	0.0212	383	422	345	*		516	566	467	
Level 3	cb-513	0.0261	561	608	513			745	806	684	
midden	cb-519	0.0315	756	813	699			997	1,070	923	
	cb-516	0.0369	952	1,018	885			1,249	1,335	1,163	
	cb-518	0.0426	1,158	1,235	1,081			1,515	1,614	1,416	
	cb-517	0.0508	1,455	1,547	1,363			1,898	2,016	1,779	
	cb-515	0.465	16,453	17,295	15,611		378 BP	21,228	22,313	20,143	509 BP
BL751	cb-534	0.0366	948	1,015	881			1,244	1,330	1,158	
TP1	cb-532	0.0503	1,437	1,528	1,346	*		1,874	1,992	1,757	
Level 7	cb-533	0.0546	1,593	1,691	1,494	*		2,075	2,202	1,948	
midden	cb-530	0.0758	2,360	2,497	2,223			3,064	3,241	2,887	
	cb-531	0.0831	2,625	2,775	2,474			3,405	3,599	3,211	
	cb-535	0.113	3,707	3,912	3,503		1515 BP	4,809	5,064	4,537	1975 BP
BL888	cb-538	0.0452	1,252	1,334	1,170	*		1,636	1,742	1,531	
TP3	cb-544	0.0459	1,278	1,361	1,194	*		1,669	1,776	1,562	
L 10	cb-541	0.0461	1,285	1,368	1,201	*		1,678	1,786	1,571	
terrace	cb-539	0.047	1,317	1,402	1,232	*		1,720	1,830	1,611	
alluvium/	cb-536	0.0482	1,361	1,448	1,274	*		1,776	1,889	1,664	
midden	cb-545	0.0536	1,556	1,653	1,459	*		2,028	2,153	1,903	
	cb-540	0.0538	1,564	1,661	1,466	*		2,038	2,163	1,912	
	cb-542	0.0557	1,632	1,733	1,532	*		2,126	2,256	1,996	
	cb-537	0.0566	1,665	1,767	1,563	*		2,168	2,300	2,036	
	cb-543	0.0738	2,288	2,421	2,154		1474 BP	2,971	3,143	2,799	1871 BP
BL755	cb-547	0.102	3,309	3,494	3,124	*		4,287	4,525	4,049	
TP4	cb-549	0.105	3,418	3,608	3,227	*		4,427	4,672	4,182	
L19	cb-546	0.109	3,562	3,760	3,365	*		4,614	4,868	4,359	
terrace	cb-550	0.117	3,852	4,064	3,640			4,987	5,260	4,714	
alluvium (buried soil)	cb-548	0.125	4,142	4,368	3,915		3430 BP	5,361	5,652	5,069	4443 BP
CV1200	cb-156	0.0406	1,086	1,159	1,012	*		1,422	1,516	1,327	
TP2	cb-154	0.0408	1,093	1,167	1,019	*		1,431	1,526	1,336	
Level 11	cb-171	0.0408	1,093	1,167	1,019	*		1,431	1,526	1,336	
	cb-157	0.0409	1,096	1,171	1,022	*		1,436	1,531	1,340	
	cb-158	0.0446	1,230	1,311	1,150			1,608	1,712	1,504	
	cb-155	0.0473	1,328	1,414	1,243			1,734	1,845	1,624	
	cb-160	0.0474	1,332	1,418	1,246			1,739	1,850	1,628	
	cb-172	0.0748	2,324	2,459	2,189			3,018	3,192	2,843	
	cb-159	0.102	3,309	3,494	3,124		1092 BP	4,287	4,525	4,049	1430 BP
CV1200	cb-169	0.0288	658	710	606			871	938	804	
TP1	cb-161	0.0429	1,169	1,247	1,091	*		1,529	1,629	1,429	
Level 21	cb-166	0.0473	1,328	1,414	1,243	*		1,734	1,845	1,624	
	cb-167	0.048	1,354	1,440	1,267	*		1,767	1,879	1,655	
	cb-168	0.0527	1,524	1,619	1,428			1,986	2,109	1,863	
	cb-164	0.0557	1,632	1,733	1,532			2,126	2,256	1,996	
	cb-165	0.0615	1,842	1,954	1,731			2,397	2,541	2,253	
	cb-162	0.0638	1,926	2,041	1,810			2,504	2,653	2,355	
	cb-163	0.0748	2,324	2,459	2,189		1284 BP	3,018	3,192	2,843	1677 BP
BL755	cb-726	0.0505	1,444	1,535	1,353	*		1,884	2,001	1,766	
TP2,L15 & 16	cb-729	0.0522	1,506	1,600	1,411	*		1,963	2,085	1,841	
	cb-728	0.0864	2,744	2,900	2,588			3,559	3,761	3,357	
	cb-727	0.195	6,676	7,029	6,323		1475 BP	8,627	9,082	8,172	1923 BP

Context	Sample No.	A/I	Age per Ellis et al. 1995	+5%	-5%		Interpreted Age	Age per Abbott and Treirweiler 1995	+5%	-5%	Interpretated Age
BL888	cb-551	0.0261	561	608	[illegible]			745	806	664	
TP4, L8	cb-745	0.0283	640	691	[illegible]	•		848	914	782	
	cb-742	0.0322	781	840	72[illegible]	•		1,030	1,105	954	
	cb-741	0.0324	789	847	730	•		1,039	1,115	963	
	cb-743	0.034	847	908	785	•		1,114	1,193	1,034	
	cb-739	0.0351	886	950	823	•		1,165	1,247	1,083	
	cb-744	0.038	991	1,060	923	•		1,300	1,389	1,212	
	cb-740	0.0389	1,024	1,094	954	•		1,342	1,433	1,252	
	cb-552	0.0447	1,234	1,315	1,153	•		1,613	1,717	1,509	
	cb-738	0.389	20,943	22,010	19,877		815 BP	27,015	28,390	25,641	1073 BP
CV137	cb-652	0.0702	2,157	2,285	2,030	•		2,803	2,967	2,639	
TP2, L15	cb-650	0.0706	2,172	2,300	2,044	•		2,822	2,986	2,657	
	cb-655	0.0711	2,19[illegible]	2,319	2,061	•		2,845	3,011	2,679	
	cb-654	0.0715	2,205	2,334	2,075	•		2,864	3,031	2,697	
	cb-648	0.0737	2,284	2,418	2,151	•		2,966	3,138	2,794	
	cb-653	0.0786	2,462	2,604	2,319	•		3,195	3,378	3,012	
	cb-649	0.0801	2,516	2,661	2,371	•		3,265	3,452	3,078	
	cb-651	0.146	4,902	5,166	4,638		2284 BP	6,341	6,681	6,000	2966 BP
CV113[illegible]	cb-660	0.108	3,52[illegible]	3,722	3,331	•		4,567	4,819	4,315	
TP1, L15	cb-663	0.11	3,599	3,798	3,399	•		4,660	4,917	4,404	
	cb-664	0.116	3,816	4,026	3,606	•		4,940	5,211	4,670	
	cb-656	0.124	4,105	4,330	3,881	•		5,314	5,603	5,024	
	cb-658	0.125	4,142	4,368	3,915	•		5,361	5,652	5,069	
	cb-657	0.149	5,011	5,281	4,741			6,481	6,828	6,133	
	cb-662	0.38[illegible]	13,365	14,307	12,9[illegible]			17,635	18,540	16,729	
	cb-661	0.402	14,172	14,900	13,444		[illegible] BP	18,288	19,226	17,350	4968 BP
CV97	cb-671	0.104	3,381	3,570	3,193	•		4,380	4,623	4,138	
TP11, L11	cb-6[illegible]	0.115	3,780	3,988	3,571	•		4,894	5,162	4,625	
	cb-670	0.122	4,033	4,254	3,812	•		5,221	5,505	4,936	
	cb-667	0.135	4,50[illegible]	4,748	4,259	•		5,827	6,142	5,512	
	cb-[illegible]	0.156	5,26[illegible]	5,547	4,982	•		6,807	7,171	6,443	
	cb-663	0.188	6,423	6,763	6,083	•		8,301	8,739	7,862	
	cb-669	0.196	6,713	7,068	6,358	•		8,674	9,131	8,217	
	cb-665	0.408	14,389	15,128	13,650		4871 BP	18,568	19,520	17,616	63[illegible] BP
BL765	cb-716	0.0344	86[illegible]	923	799	•		1,137	1,213	1,052	
TP2, L2	cb-721	0.039	1,0[illegible]	1,098	957	•		1,347	1,438	1,256	
	cb-722	0.0411	1,104	1,178	1,029	•		1,445	1,541	1,349	
	cb 723	0.0416	1,122	1,197	1,047	•		1,468	1,565	1,371	
	cb-720	0.042[illegible]	1,169	1,247	1,091	•		1,529	1,629	1,429	
	cb-7[illegible]	0.04[illegible]	1,285	1,368	1,201	•		1,678	1,786	1,571	
	cb-718	0.0464	1,296	1,380	1,212	•		1,692	1,801	1,584	
	cb-724	0.056	1,643	1,745	1,542			2,140	2,271	2,010	
	cb-719	0.944	33,[illegible]	35,507	32,089		1124 BP	43,583	45,786	41,380	1470 BP
BL765	cb-747	0.0319	771	828	713	•		1,016	1,090	941	
TP2, [illegible]	cb-75[illegible]	0.0367	944	1,011	878	•		1,240	1,325	1,156	
	cb-755	0.0392	1,035	1,106	964	•		1,356	1,448	1,265	
	cb-756	0.0426	1,158	1,235	1,081	•		1,515	1,614	1,416	
	cb-746	0.0523	1,509	1,604	1,415			1,968	2,090	1,846	
	cb-759	0.0578	1,708	1,813	1,604			2,224	2,359	2,089	
	cb-749	0.0651	1,973	2,091	1,855			2,565	2,717	2,413	
	cb-748	0.123	4,069	4,292	3,847			5,267	5,554	4,980	
	cb-757	0.145	4,866	5,128	4,603			6,294	6,632	5,956	
	cb-758	0.607	21,595	22,694	20,496		977 BP	27,855	29,272	26,439	1282 BP
BL821	cb-761	0.0339	843	904	782			1,109	1,188	1,030	
TP2, L18-19	cb-765	0.0822	2,592	2,741	2,443	•		3,363	3,555	3,171	
	cb-764	0.0827	2,610	2,760	2,460	•		3,386	3,579	3,193	
	cb-760	0.0957	3,081	3,254	2,908			3,993	4,216	3,770	
	cb-766	0.105	3,418	3,608	3,227			4,427	4,672	4,182	
	cb-762	0.124	4,106	4,330	3,881			5,314	5,603	5,024	
	cb-763	0.284	9,899	10,413	9,385			12,763	13,424	12,118	
	cb-767	0.349	12,2[illegible]	12,885	11,621		2601 BP	15,814	16,629	15,000	3375 BP
CV1200	CB-779	0.0260	[illegible]	6[illegible]	531			768	830	706	
TP2	CB-783	0.0293	[illegible]6	7[illegible]	62[illegible]	•		894	963	826	
L7	CB-77[illegible]	0.031	738	794	682	•		974	1,046	901	
	CB-778	0.031	738	794	6[illegible]	•		974	1,046	901	
	CB-781	0.031	738	794	682	•		974	1,046	901	
	CB-77[illegible]	0.0319	771	828	713	•		1,0[illegible]	1,090	941	
	CB-7[illegible]	0.0331	814	874	754	•		1,072	1,149	994	
	CB-774	0.0368	948	1,015	881			1,244	1,330	1,158	
	CB-777	0.0507	1,813	1,923	1,704		746 BP	2,360	2,501	2,218	984 BP

Context	Sample No.	A/I	Age	+5%	-5%		Interpreted Age	Age	+5%	-5%	Interpretated Age
			per Ellis et al. 1995					per Abbott and Treirweiler 1995			
CV595	CB-790	0.039	1,028	1,098	957	•		1,347	1,438	1,256	
TP1, L 3	CB-788	0.0407	1,089	1,163	1,016	•		1,426	1,521	1,331	
	CB-784	0.0457	1,270	1,353	1,188			1,660	1,766	1,553	
	CB-787	0.0545	1,589	1,688	1,490			2,070	2,197	1,943	
	CB-786	0.0583	1,727	1,832	1,621			2,248	2,384	2,112	
	CB-789	0.103	3,345	3,532	3,159		**1059 BP**	4,334	4,574	4,093	**1387 BP**
CV595	CB-793	0.0351	886	950	823	•		1,165	1,247	1,083	
TP1, L6	CB-795	0.0427	1,162	1,239	1,084			1,520	1,619	1,420	
	CB-792	0.0481	1,357	1,444	1,270			1,772	1,884	1,659	
	CB-794	0.0623	1,871	1,984	1,759			2,434	2,580	2,289	
	CB-791	0.0723	2,233	2,364	2,103		**886 BP**	2,901	3,070	2,732	**1165 BP**
BL755 Re-analysis of CB547	CB-796	0.104	3,381	3,570	3,193			4,380	4,623	4,138	
modern Rabdotus, Fort Hood	CB-797	0.0123	61	83	39			101	130	72	

APPENDIX D

Projectile Point Data

Projectile Point Data

KEY TO DATA CODES

Fragment Type	C =	Complete
	Bl =	Blade only
	St	Stem only
	Bl & St =	Blade and stem
	LongSeg =	Longitudinal segment
	B =	Barb
	M =	Medial fragment
	D =	Distal fragment
	P =	Proximal fragment
Material	lithic material as described in Chapter 4	
Breakage	N =	None
	P =	Perverse
	Es =	End-shock
	Im =	Impact
	O =	Other
	Bu =	Burinated
	Ind =	Indeterminate
	Ou =	Outrepas
	Nt =	Notch
Flaking	M =	Minimal
	P =	Parallel
	R =	Random
	AB =	Alternately Beveled
	O =	Other
	Ind =	Indeterminate
Cross-section	D =	Diamond
	Bv=	Beveled
	PC =	Plano-convex
	Ind =	Indeterminate
	W =	Wedge-shaped
	BC =	Bi-convex

Shape	Six separate portions of the artifact are described in this column, with each data code separated by a comma.		
	1. Blade Shape (BL)	T =	Triangular
		O =	Ovate
		L =	Lancolate
		P =	Parallel
		Unk =	Unknown
		W =	Wedge
	2. Stem Shape	Exp =	Expanding
		Str =	Straight
		Ct =	Contracting
		N =	None
		Ind =	Indeterminate
		Bu =	Bulbar
	3. Base Shape	Str =	Straight
		Cv =	Convex
		Cc =	Concave
		P =	Pointed
		I =	Indented
		N =	Notched
		0 =	Other
		Ind =	Indeterminate
	4. Shoulder Shape	Sl =	Sloping
		R =	Rounded
		Ab =	Abrupt
		B =	Barbed
		EB =	Extremely Barbed
		Ind =	Indeterminate
		N/A =	Not applicable
	5. Tang Shape	R =	Rounded
		P =	Pointed
		S =	Square
		Ind =	Indeterminate
		Unk =	Unknown
Notch Shape	B =	Basal	
		Bs =	Basal & side
		Bc =	Basal & corner
		S =	Side
		Cr =	Corner
		N =	None
		Ind =	Indeterminate

Site	Proj.	TP	BT	Lvl	Curate No.	Lithic Material	Proj. Pt Type	Frag. Type	Brk.	Port. Rewrk	Flak.	Sym.	Ser.	BT	BG	Shape (Bl, St, Bs, Sh, T)	X-sect.	Not.	L	W	T	BL	BW	SL	SW	ST	NW
BL0154	17	0	6	32	2-154-099	06-HL Tan	Pedernales	C	N	Blade	R	T	F	T	F	T,[illegible]	BC	-	43.34	27.44	8.59	27.7	27.44	14.67	16.52	7.26	16.07
BL0154	17	4	0	13	2-154-356	15-Gry/Brn/Grn	Angostura	St	P	none	R	F	F	T	T	Unk,Ct,R,Ab,N/A,	PC	C	13.53	18.63	5.87	-	-	13.53	16.63	5.87	-
BL0154	17	4	0	5	2-154-417	17-Owl Crk Black	Other Dart	Bl & St	Es	none	P	F	F	T	F	T,Ct,Str,Ab,N/A,	BC	C	43.5	25.45	7.1	34.45	25.45	8.65	15.07	4.42	15.86
BL0154	17	3	0	2	2-154-150	17-Owl Crk Black	Other Dart	St	P	none	R	F	F	T	F	Unk,Bu,O,B,N/A,	Ind	C	10.27	21.32	4.67	-	-	10.27	21.32	4.67	17.42
BL0154	17	4	0	15	2-154-275	Indet Lt Brown	Martindale	C	Ind	Blade	R	F	F	T	F	T,Ct,O,B,N/A,	BC	C	54.75	30.39	7.33	41.73	30.39	12.7	24.32	5.83	17.67
BL0154	17	4	0	11	2-154-267	06-HL Tan	Morrill	C	N	none	P	F	T	T	F	T,Ct,P,B,N/A,	BC	C	54.17	22.22	8.29	37.03	22.11	18.5	17.46	7.44	17.96
BL0154	17	3	0	2	2-154-418	Indet Dk Gray	Scallorn	Bl & St	O	none	R	T	F	T	F	T,Ct,R,B,N/A,	BC	C	14.38	11.6	2.67	11.49	11.6	3.33	8.45	2.27	6.48
BL0154	17	3	0	3	2-154-320	Indet Lt Brown	Other Dart	P	Ind	Ind	Ind	F	F	F	F	Unk,Ct,Sq,B,N/A,	Ind	C	17.42	12.64	4.7	-	-	-	-	-	-
BL0154	17	0	6	12	2-154-103	09-HL Tr Brown	Plainview	Other	P	none	R	T	F	T	F	L,Bu,Cv,B,N/A,	PC	C	48.91	22.16	8.61	-	22.16		17.2	3.97	-
BL0154	17	4	0	11	2-154-266	08-FH Yellow	Martindale	Bl & St	O	none	R	T	F	T	F	T,Ct,O,B,N/A,	BC	C	42.65	25.36	7.78	31.1	25.36	10.69	21.66	5.32	16.21
BL0154	17	3	0	3	2-154-154	Indet Dk Gray	Other Dart	M	Brn	none	P	F	F	F	F	Unk,Bu,Cc,Ab,P,	BC	C	14.69	17.03	5.09	-	-	-	-	-	-
BL0154	17	3	0	3	2-154-1[illegible]	Indet Lt Brown	Other Arrow	pt Bl & St	P	none	P	T	T	F	F	T,Ct,Ind,B,P,	BC	C	19.11	16.01	3.45	15.58	15.88	-	-	-	6.7
BL0154	17	1	0	12	2-154-222	Indet Lt Gray	Pedernales	pt Bl & St	Ind	none	R	T	F	T	F	T,Ct,P,B,P,	BC	C	56.49	30.21	7	37.73	30.48	15.08	17.97	6.34	16.93
BL0154	17	3	0	3	2-154-158	06-HL Tan	Other Arrow	Bl only	Ind	none	P	T	T	F	F	T,Ct,Cc,Ab,R	BC	C	26.13	20.59	3.39	23.11	19.21	-	-	-	6
BL0154	17	1	0	9	2-154-172	06-HL Tan	Marshall	C	N	none	R	T	F	T	F	T,Ct,Cc,N/A,Sq	BC	C	55.16	33.7	8.36	40.53	33.7	13.64	18.76	7.02	16.49
BL0154	17	3	0	4	2-154-177	09-HL Tr Brown	Other Dart	D	P	none	R	F	F	F	F	T,Ct,N,N/A,Sq	BC	B	57.27	24.42	6.52	57.27	24.42	-	-	-	-
BL0154	17	1	0	8	2-154-165	Indet White	Pedernales	Bl & St	Ind	none	R	T	F	T	F	T,Ct,Cv,Sl,Sq	BC	C	54.85	30.52	6.85	37.47	30.52	18.67	20.59	5.85	17.4
BL0168	17	1	0	1	2-168-043	15-Gry/Brn/Grn	Bulbar Stemmed	pt Bl & St	P	none	R	F	T	T	F	T,Ct,R,Ab,N/A,	BC	C	26.01	15.35	3.8	15.72	15.35	9.43	5.18	3.22	4.43
BL0168	17	1	0	1	2-168-035	Indet Lt Brown	Dart	C	N	Blade	P	T	F	T	F	T,Ct,Str,B,N/A,	BC	C	45.28	14.63	5.65	34.35	14.63	10.72	13.52	4.93	13.4
BL0168	17	4	0	4	2-169-079	06-HL Tan	Castroville	pt Bl & St	Im	none	R	T	F	F	F	T,Ct,Str,B,N/A,	BC	C	50.53	36.27	6.79	43.29	36.27	6.77	17.55	5.32	19.35
BL0168	17	4	0	4	2-168-082	Indet Lt Brown	Other Dart	St	P	none	R	T	F	T	F	Unk,Ct,R,B,R	Ind	C	9.9	23.66	5.38	-	-	9.9	23.66	5.38	17.77
BL0198	17	0	0	0	2-199-056	17-Owl Crk Black	Pedernales	pt Bl & St	Im	none	P	F	F	T	F	Unk,Ct,[illegible]c,Ab,P,	BC	C	30.13	16.85	6.84	30.13	19.33	11.87	16.01	6.06	1[illegible].41
BL0198	17	1	0	3	2-198-022	Indet Lt Gray	Other Dart	St	O	none	R	T	F	T	F	Unk,Ct,Cc,Ab,R	Ind	C	15.59	18.38	3.84	-	-	[illegible]	18.38	3.84	-
BL0208	17	2	0	4	2-208-092	Indet Lt Brown	Pedernales	C	N	none	P	T	F	T	F	T,Ct,Cc,B,R	BC	C	48.87	24.71	6.62	36.27	24.73	[illegible]	18.9	5.47	18.69
BL0233	16	2	0	3	2-233-023	08-FH Yellow	Uvalde	Bl & St	Es	Ind	AB	F	F	T	F	Unk,Ct,Cc,Ab,P	B	C	-	26	-	-	26	14	13	-	17
BL0339	17	0	0	0	2-339-070	Indet White	Scallorn	C	N	none	P	T	T	T	F	T,Ct,P,B,N/A	BC	C	21.43	10.62	2.53	17.51	10.62	4.82	7.08	2.23	5.47
BL0431	22	2	0	3	2-431-042	06-HL Tan	Pedernales	C	N	none	R	T	F	T	F	T,Ct,Cv,Ab,Sq	BC	C	56.31	24.9	9.15	39.99	25.02	14.98	15.64	6.15	15.58
BL0433	17	2	0	2	2-433-086	Indet Lt Brown	Bonham	pt Bl & St	Ind	none	P	T	T	T	F	T,Ct,Ind,Ab,Ind	PC	C	16.58	19.72	2.1	10.05	18.25	6.96	5.7	1.53	5.67
BL0433	17	1	0	3	2-433-122	Indet Dk Brown	Scallorn	C	N	none	P	T	T	T	F	T,Ct,O,B,Ind	BC	C	34.64	15.12	5.26	29.3	15.12	5.8	9.51	2.52	7.64
BL0433	17	3	0	1	2-433-183	06-HL Tan	Other Dart	M	Es/Im	Ind	R	F	F	F	F	Unk,Ct,P,B,Ind	BC	C	18.27	20.06	5.6	-	-	-	-	-	-
BL0433	17	1	0	2	2-433-103	Indet Lt Brown	Perdiz	Bl & St	Es	none	P	F	F	T	F	T,Ct,P,Sl,Ind	BC	C	21.06	15.18	3.28	21.06	13.61	6.75	4.85	1.65	4.55
BL0433	17	3	0	2	2-433-072	Indet Lt Brown	Other Dart	St	Es	none	P	T	F	T	F	Unk,Ct,Cv,Ab,N/A	BC	C	18.29	23.78	5.34	-	-	18.29	23.78	5.34	19.81
BL0433	17	2	0	2	2-433-097	Indet Dk Brown	Bonham	Bl & St	P	none	R	F	F	T	F	T,Ct,R,B,N/A,	BC	C	16.26	18.14	3.91	9.56	18.14	7.62	5.73	2.72	5.73
BL0433	17	2	0	1	2-433-042	Indet Lt Brown	Other Arrow	D	Ind	none	P	F	F	F	F	T,Ct,Cv,B,N/A,	BC	C	17.97	13.57	2.97	-	-	-	-	-	-
BL0433	17	2	0	1	2-433-045	Indet Dk Brown	Other Arrow	pt Bl & St	Ind	none	Ind	F	F	T	F	Unk,Ct,Cc,Ind,P,	BC	C	19.57	18.62	3.72	13.12	19.57	6.59	6.63	3.33	7.21
BL0433	17	1	0	2	2-433-100	Indet Dk Grey	Other Dart	D	Ind	none	R	F	F	F	F	T,Ct,Cv,Ab,R	BC	C	15.38	16.99	4.6	15.38	16.99	-	-	-	-
BL0433	17	3	0	1	2-433-027	Indet Misc.	Scallorn	pt Bl & St	P	none	P	F	T	T	F	T,Ct,Cv,Ab,Sq	BC	C	14.99	16.1	3.35	9.57	15.36	8.27	5.76	2.56	5.79
BL0433	17	3	0	0	2-433-026	Indet Lt Brown	Other Arrow	pt Bl & St	P	none	P	F	T	T	F	T,Ct,Str,Ab,Sq	BC	C	26.35	19.26	3.24	20.87	18.68	5.7	7.2	3.02	18.68
BL0433	17	1	0	1	2-433-065	Indet Mottled	Bonham	pt Bl & St	Es	none	P	T	T	T	F	T,Ct,Str,N/A,Sq	BC	C	23.69	21.14	3.54	15.12	21.16	7.84	5.71	2.48	5.25
BL0470	17	1	0	7	2-470-008	Indet Dk Gray	Lange	Bl & St	P	none	P	T	F	T	F	T,Ct,P,B,N/A,	BC	C	56.72	27.16	5.87	47.42	26.43	9.23	16.26	4.64	14.92
BL0504	22	1	0	3	2-504-073	17-Owl Crk Black	Scallorn	LongSeg	Brn	none	F	F	F	T	F	T,Exp,Cv,N/A,Ind,	BC	Ind	26.13	10.99	2.9	20.83	10.7	4.51	5.16	1.84	5.26
BL0504	22	1	0	2	2-504-008	Indet Lt Brown	Scallorn	C	N	Barbs	P	T	T	T	F	T,Ct,P,B,N/A,	BC	C	3.07	15.1	3.34	24.63	14.76	5.51	7.56	1.7	5.02

Site	Proj.	TP	BT	Lvl	Curate No.	Lithic Material	Proj. Pt Type	Frag. Type	Brk.	Port. Rework	Flak.	Sym.	Ser.	BT	BG	Shape (Bl, St, Bs, Sh, T)	X-sect.	Nct.	L	W	T	EL	BW	SL	SW	ST	NW
BL0504	22	1	0	3	2-504-040	Indet Lt Brown	Fresno	C	N	Blade	R	F	F	T	F	T,Ct,P,B,N/A,	BC	C	20.7	14.78	4.05	20.7	14.78	-	-	-	-
BL0504	22	1	0	2	2-504-072	Indet Misc.	Scallorn	LongSeg	Im	Blade	R	F	F	T	F	T,Exp,Cc,Ab,R	BC	C	29.7	12.61	3.69	22.43	10.99	5.48	6.71	2.87	5.95
BL0504	22	1	0	3	2-504-026	Indet Dk Brown	Other Dart	D	Im	Bl & brb	R	F	F	F	F	T,Ct,Cc,N/A,R	BC	C	36.62	20.48	5.05	36.62	20.48	-	-	-	-
BL0532	17	0	0	0	2-532-081	06-HL Tan	Wells	Bl & St	Ind	none	P	T	F	T	F	Ov,Exp,Cc,Ab,R	BC	Side	52.44	19.43	7.97	20.98	15.85	26.34	14.98	7.99	15.57
BL0532	17	4	0	2	2-532-046	Indet Misc.	Bulverde	Bl & St	Ind	none	R	T	F	T	F	T,Exp,Cc,B,R	BC	C	38.57	23.38	6.32	21.53	23.38	15.72	12.89	5.79	12.64
BL0532	17	0	0	0	2-532-082	Indet Dk Gray	Pedernales	Bl & St	Ind	none	P	F	F	T	F	T,Exp,Cc,B,R	BC	C	50.25	30.85	6.47	29.29	30.85	18.34	15.17	6.11	16.31
BL0532	17	0	0	0	2-532-086	15-Gry/Brn/Grn	Bulverde	Bl & St	Ind	none	P	T	F	T	F	T,Exp,Cc,B,R	BC	C	52.8	23.11	8.33	35.54	20.4	16.95	14.82	5.68	14.75
BL0567	17	2	0	1	2-567-010	06-HL Tan	Other Dart	D	P	none	P	F	F	F	F	T,Exp,Cv,Ab,N/A,	BC	Side	41.94	22.7	4.4	41.94	22.7	-	-	-	-
BL0567	17	2	0	2	2-567-020	Indet Lt Brown	Scallorn	C	Ind	Blade	P	T	T	T	F	T,Exp,Cc,B,P,	PC	C	26.58	9.77	3.28	21.73	9.74	4.21	8.24	3	5.56
BL0567	17	2	0	2	2-567-028	Indet Mottled	Scallorn	Bl & St	Im	none	P	T	T	T	F	T,Exp,Cc,B,P,	BC	C	25.21	12.12	3.23	19.07	12.05	5.55	10.6	2.52	5.53
BL0567	17	2	0	2	2-567-049	19-C Dr Gray	Other Dart	LongSeg	Im	none	P	F	F	F	F	T,Exp,Cc,B,F,	BC	C	46.28	20.68	5.83	43.63	20.33	-	-	-	-
BL0567	17	2	0	3	2-567-062	Indet Lt Brown	Other Point	D	Ind	none	R	F	F	F	F	T,Exp,Cc,B,P,	BC	C	16.86	11.03	3.31	16.86	11.03	-	-	-	-
BL0567	17	2	0	2	2-567-052	Indet Lt Brown	Fresno	P	Es	none	R	F	F	F	F	T,Exp,Str,B,P	PC	C	22.42	16.73	3.92	-	-	-	-	-	-
BL0567	17	2	0	2	2-567-021	Indet Lt Brown	Scallorn	C	Ind	none	P	T	T	T	F	T,Exp,Cc,N/A,P	BC	Ind	33.65	13.93	3.25	26.42	13.92	6.62	8.37	2.52	5.72
BL0567	17	2	0	2	2-567-022	08-FH Yellow	Dart	C	N	none	P	T	T	T	F	T,Exp,Cc,N/A,P	BC	Ind	59.47	19.44	6.05	49.25	18.75	9.31	15.44	4.56	13.88
BL0567	17	2	0	2	2-567-051	Indet Dk Gray	Other Arrow	Bl only	Ind	none	P	T	F	F	F	T,Exp,Cv,N/A,P	PC	C	22.62	16	3.6	21.45	13.88	-	-	-	-
BL0567	17	2	0	2	2-567-027	Indet Dk Gray	Other Arrow	Bl only	Es	none	P	T	F	F	F	T,Exp,Cc,B,R	BC	C	23	13.04	3.15	23	13.04	-	-	-	-
BL0567	17	2	0	2	2-567-026	Indet Lt Brown	Other Point	D	Es	Ind	P	F	F	F	F	T,Exp,Cv,N/A,R	BC	Ind	10.94	8.56	2.62	-	-	-	-	-	-
BL0567	17	2	0	1	2-567-008	Indet Dk Brown	Other Dart	Bl & St	O	none	P	T	F	T	F	P,Exp,Cv,Ind,Sq	BC	Ind	42.14	19.79	5.47	33.22	19.79	7.58	17.45	3.82	-
BL0568	17	3	0	1	2-568-026	Indet Dk Gray	Other Dart	Bl only	Es	none	P	F	F	F	F	T,Exp,Cv,EB,Ind	BC	C	36.55	27.21	7.22	36.55	27.21	-	-	-	-
BL0568	17	0	0	0	2-568-007	Indet Dk Gray	Ellis	Bl & St	Im	none	P	T	F	T	F	T,Exp,Cc,EB,P	BC	C	48.36	33.39	6.65	38.02	33.39	9.37	21.37	5.86	16.67
BL0606	16	0	0	0	1-606-014	16-Leona Park	Castroville	Barb	Ind		R	F	F	T	F	Unk,Exp,Cc,B,Ind	BC	C	-	-	-	-	-	-	-	-	-
BL0740	17	2	0	2	2-740-143	06-HL Tan	Edgewood	Bl & St	Ind	none	P	T	F	T	F	T,Exp,Str,Ab,Sq	BC	C	28.52	18.43	5.58	20.87	16.43	7.82	17.89	5.01	12.9
BL0740	17	2	0	2	2-740-149	06-HL Tan	Scallorn	Bl & St	Im	none	P	T	T	T	F	T,Exp,Cv,Sl,Sq	BC	C	19.15	11.65	2.51	13.46	11.65	5.55	7.77	2.42	5.29
BL0751	17	0	0	0	2-751-071	10-HL Blue	Other Dart					F	F	F	F	**Exp,Cc,B,P,		C	39.47	19.08	3.41	-	-	-	-	-	-
BL0751	17	1	0	8	2-751-055	06-HL Tan	Other Dart	Bl only	Ind	none	P	T	T	F	F	P,Exp,Cv,B,P	BC	Side	55.97	16.53	5.77	55.97	16.53	-	-	-	-
BL0751	17	0	0	0	2-751-070	06-HL Tan	Ensor	Bl & St	Im	none	P	T	F	T	F	T,Exp,Cc,B,Sq	BC	C	37.21	23.8	6.19	26.77	22.51	8.96	22.95	5.03	15.89
BL0751	17	1	0	11	2-751-063	Indet Dk Gray	Pedernales	St	Ind	none	P	F	F	T	F	Unk,Exp,Str,B,Sq	BC	C	20.61	16.03	5.61	-	-	20.61	16.03	6.61	-
BL0754	17	2	0	2	2-754-032	06-HL Tan	Sabinal	C	N	none	P	T	F	T	F	T,Exp,Str,B,P	PC	C	39.84	23.29	3.85	31.56	14.62	9.43	4.91	3.28	5.78
BL0754	17	2	0	3	2-754-041	Indet Lt Brown	Bonham	pt Bl & St	Im	none	P	F	F	T	F	T,Exp,Str,B,P	BC	Side	27.03	11.88	4.37	20.44	11.68	7.36	6	3.01	5.31
BL0754	17	2	0	3	2-754-043	08-FH Yellow	Other Arrow	Bl only	Ind	none	P	T	T	F	F	T,Exp,Cv,Ab,Sq	PC	C	30.58	17.63	2.75	25.93	13.91	-	-	-	-
BL0754	17	2	0	2	2-754-030	06-HL Tan	Perdiz	Bl & St	Ind	none	P	F	F	T	F	T,Exp,Cv,B,Sq	PC	C	37.07	16.4	3.15	27.42	16.45	10.18	7.3	2.46	7.3
BL0754	17	2	0	3	2-754-042	06-HL Tan	Other Arrow	Bl only	Ind	none	P	T	F	F	F	T,Exp,Cv,B,Sq	BC	C	23.17	14.66	3.92	23.17	14.66	-	-	-	-
BL0755	17	2	0	3	2-755-023	Indet Dk Gray	Dart	C	Ind	none	P	T	F	T	F	T,Exp,Cc,Ab,P	BC	C	38.36	17.35	5.63	23.54	17.35	13.77	15.8	5.24	13.02
BL0755	17	2	0	4	2-755-040	Indet Lt Brown	Other Dart	D	P	none	P	F	F	F	F	T,Exp,Cc,Ab,P	BC	C	25.73	17.88	3.93	25.73	17.08	-	-	-	-
BL0755	17	2	0	4	2-755-043	Indet Dk Gray	Dart	Bl & St	Ind	none	P	T	F	T	F	P,Exp,Cc,Ab,P	BC	C	37.46	20.05	6.3	24.54	19.64	10.57	15.04	5.6	13.1
BL0755	17	2	0	5	2-755-052	Indet Lt Gray	Dart	C	N	none	P	T	F	T	F	T,Exp,Cc,Ab,P	BC	C	39.89	17.66	6.65	29.34	17.82	8.6	16.39	5.09	13.34
BL0755	17	2	0	4	2-755-143	06-HL Tan	Dart	C	N	none	P	T	F	T	F	T,Exp,R,B,R	BC	C	41.75	17.72	6.64	23.89	16.63	12.07	15.41	6.25	11.95
BL0755	17	2	0	4	2-755-145	Indet Dk Brown	Dart	Bl & St	Im	none	P	T	F	T	F	Unk,Exp,Cv,R,R	BC	Ind	26.14	17.62	5.83	13.24	15.89	10.5	15.93	4.64	13.87
BL0755	17	4	1	19	2-755-135	Indet Misc.	Marcos	pt Bl & St	Ind	none	P	T	F	T	F	T,Exp,Cc,Ab,Sq	BC	C	38.35	31.53	5.78	30.62	31.42	8.3	15.44	4.66	13.65
BL0755	17	2	0	4	2-755-044	Indet Dk Gray	Dart	Bl & St	O	none	P	T	F	T	F	Unk,Exp,Cc,B,Sq	BC	C	29.55	18.5	5.82	16.72	18.5	13.31	13.93	4.62	13.83
BL0765	17	2	0	1	2-765-014	Indet Dk Brown	Other Dart	M	P	none	Ind	F	F	F	F	T,Exp,Str,B,P,	BC	C	35.6	4.41	24.21	-	-	-	-	-	-

Site	Proj.	TP	BT	Lvl	Curate No.	Lithic Material	Proj. Pt Type	Frag. Type	Brk.	Port. Rework	Flak.	Sym.	Ser.	BT	BG	Shape (Bl, St, Bs, Sh, T)	X-sect.	Not.	L	W	T	BL	BW	SL	SW	ST	NW
BL0765	17	2	0	1	2-765-012	Indet Lt Brown	Other Point	D	Ind	none	R	F	F	F	F	T,Exp,Cv,B,R	BC	C	21.94	13.2	3.31	-	-	-	-	-	-
BL0773	22	1	0	4	2-773-023	Indet Lt Brown	Perdiz	P	Ind	Blade	R	T	F	T	F	T,Exp,Ind,B,Ind	BC	C	30.1	27.23	3.79	20.97	17.26	8.17	6.73	2.75	7.21
BL0773	22	5	0	3	2-773-073	Indet Lt Brown	Other Arrow	P	Ind	Blade	R	F	F	T	F	Ov,Exp,Cv,B,P	BC	C	20.03	10.43	3.98	14.22	10.14	5.41	9.58	2.84	5.96
BL0773	22	2	0	3	2-773-052	Indet Mottled	Bonham	P	Es	none	P	F	F	T	F	Unk,Exp,Str,B,P	BC	Side	21.33	19.28	3.8	13.55	15.96	5.44	7.32	2.48	6.83
BL0773	22	1	0	4	2-773-141	Indet Dk Gray	Other Arrow	M	P	none	P	F	F	F	F	Unk,Exp,Cc,B,R	BC	Ind	10.33	11.92	3.28	-	-	-	-	-	-
BL0773	22	5	0	2	2-773-136	Indet Lt Brown	Scallorn	LongSeg	Bm	none	R	F	F	T	F	T,Exp,Cc,Ab,Sq	BC	C	33.08	12.28	3.52	27.47	12.08	4.63	8.42	2.2	4.89
BL0773	22	1	0	6	2-773-137	Indet Dk Brown	Other Arrow	Ind	Bm	none	P	F	F	F	F	Unk,Exp,Str,Ind,Sq	BC	Ind	19.23	10.53	3.66	19.23	10.58	-	-	-	-
BL0821	17	4	0	8	2-821-252	06-HL Tan	Ensor	C	O	nor	P	T	F	T	F	T,Exp,Cv,B,Ind	BC	C	38.14	19.58	5.75	29.28	19.38	7.59	19.59	5.09	14.86
BL0821	17	1	0	5	2-821-292	06-HL Tan	Marshall	Bl & St	Ind	none	R	T	F	T	F	T,Exp,Cv,B,Ind	BC	C	32.17	31.16	6.25	24.2	30.57	10.29	17.18	4.27	15.21
BL0821	17	1	0	6	2-821-334	06-HL Tan	Other Dart	M	P	none	P	F	F	F	F	Unk,Exp,Ind,Ind,Ind	BC	Ind	20.45	22.88	5.4	-	-	-	-	-	-
BL0821	17	2	0	3	2-821-088	Indet Dk Brown	Other Dart	pt Bl & St	Ind	none	P	T	F	F	F	T,Exp,Cc,B,P	BC	C	41.53	33.53	6.71	29.28	33.53	10.4	14.12	5.13	18.39
BL0821	17	2	0	9	2-821-180	09-HL Tr Brown	Bulverde	C	N	none	P	T	F	T	F	T,Exp,Cc,B,P	BC	C	75.84	25.51	8.19	57.01	25.81	17.61	14.54	5.82	15.08
BL0821	17	1	0	6	2-821-331	Indet Lt Brown	Other Dart	D	Ind	none	P	F	F	F	F	T,Exp,Cc,B,P	BC	C	31.25	22.81	6.3	31.25	22.81	-	-	-	-
BL0821	17	1	0	3	2-821-071	Indet Lt Gray	Other Point	M	P	none	P	F	F	F	F	T,Exp,Str,B,P	BC	C	28.23	19.59	4.64	28.23	19.59	-	-	-	-
BL0821	17	2	0	12	2-821-215	Indet Lt Brown	Scallorn	C		none	P	T	T	T	F	T,Exp,Str,B,P	BC	C	22.67	10.58	2.62	17.27	10.07	4.97	8.54	2.19	4.6
BL0821	17	4	0	9	2-821-256	06-HL Tan	Lange	Bl & St	Ind	none	P	T	F	T	F	T,Exp,Str,B,P	BC	C	64.52	30.99	7.71	52.14	30.99	11.11	19.64	6.67	18.83
BL0821	17	1	0	5	2-821-337	Indet Lt Brown	Other Point	D	P	none	P	F	F	F	F	T,Exp,Str,B,P	BC	C	26.61	11.86	2.52	26.61	11.86	-	-	-	-
BL0821	17	3	0	7	2-821-162	Indet Misc.	Pedernales	pt Bl & St	O	none	P	T	F	T	F	T,Exp,Str,Ind,P	BC	Ind	41.31	32.16	6.02	22.26	32.16	16.48	18.56	5.67	18.65
BL0821	17	1	0	6	2-821-333	13-ER Flecked	Young	P	Ind	none	R	F	F	F	F	Unk,Exp,Str,Ind,P	BC	Ind	20.42	20.75	3.73	-	-	-	-	-	-
BL0821	17	0	2	0	2-821-263	Indet Dk Brown	Marcos	Bl & St	P	none	P	T	F	T	F	T,Exp,Cc,B,R	BC	C	42.84	32.47	6.38	33.54	30.92	9.47	22.18	4.92	15.58
BL0821	17	2	0	5	2-821-099	Indet Dk Brown	Fresno	P	P	none	P	F	F	F	F	T,Exp,Cv,B,R	PC	C	14.23	16.24	2.57	-	-	-	-	-	-
BL0821	17	1	0	7	2-821-310	Indet Mottled	Other Dart	C	O	none	P	T	F	T	F	Ov,Exp,Cv,B,R	BC	C	39.85	17.15	5.32	31.4	16.44	9.59	16.24	5.4	13.83
BL0821	17	2	0	5	2-821-16[illegible]	17-Owl Crk Black	Ensor	Bl & St	Ind	none	P	T	F	T	F	T,Exp,Str,B,R	BC	B	26.13	17.11	4.31	21.4	17.11	5.29	13.95	3.72	12.96
BL0821	17	2	0	9	2-821-132	Indet Dk Brown	Scallorn	St	Ind	none	P	F	F	T	F	Unk,Exp,Str,B,R	BC	C	8.13	10.3	2.74	-	-	8.13	10.3	2.74	6.37
BL0821	17	4	0	3	2-821-224	09-HL Tr Brown	Other Dart	M	Im	none	P	F	F	F	F	T,Exp,I,Sl,R	BC	C	62.87	31.43	7.71	62.87	31.43	-	-	-	-
BL0821	17	2	0	19	2-821-167	Indet Lt Brown	Other Dart	Bl & St	P	none	P	T	F	T	F	P,Exp,Cc,Ab,Sq	BC	C	58.45	32.54	7.15	44.12	32.54	12.4	19.95	6.43	18.46
BL0821	17	0	2	0	2-821-261	Indet Dk Brown	Montell	pt Bl & St	Ind	none	P	F	F	T	F	Unk,Exp,Cc,Ab,Sq	BC	C	25.66	29.24	5.48	16.64	29.24	7.88	20.56	3.99	
BL0821	17	4	0	8	2-821-251	06-HL Tan	Marshall	C .	Ind	none	P	T	F	T	F	T,Exp,Cv,Ab,Sq	BC	C	52.36	33.01	7.37	42	31.19	11.23	16.77	7.13	15.72
BL0821	17	1	0	4	2-821-324	Indet Lt Brown	Other Arrow	St	Ind	none	P	F	F	T	F	Unk,Exp,Str,Ab,Sq	BC	C	6.42	11.62	3.25	-	-	6.42	11.62	3.25	-
BL0821	17	1	0	3	2-821-072	Indet Black	Scallorn	Bl & St	Im	none	P	T	F	T	F	T,Exp,Cc,B,Sq	BC	C	12.78	12.32	3.61	7.16	12.31	5.58	11.56	3.02	6.03
BL0821	17	2	0	6	2-821-110	Indet Dk Brown	Scallorn	C	Ind	none	P	T	F	T	F	T,Exp,Cc,B,Sq	BC	C	16.9	10.85	2.43	13.76	10.85	3.08	6.9	2.08	5.82
BL0821	17	4	0	6	2-821-233	Indet Lt Brown	Travis	C	N	none	R	T	F	T	F	T,Exp,Cc,B,Sq	BC	C	64.5	26.7	9.13	47.55	26.7	17.34	16.2	8.44	17.12
BL0821	17	2	0	14	2-821-199	Indet Dk Brown	Other Dart	St	Ind	none	P	F	F	T	F	Unk,Exp,Cv,B,Sq	BC	C	14.8	22.31	5.6	-	-	14.8	22.6	5.6	-
BL0821	17	1	0	6	2-821-317	Indet Lt Brown	Other Dart	Bl & St	P	none	P	T	F	T	F	P,Exp,Cv,B,Sq	BC	C	38.21	38.2	8.02	27.46	38.2	13.47	23.8	6.51	24.44
BL0821	17	2	0	9	2-821-392	Indet Dk Gray	Chadbourne	St	P	none	P	T	F	T	F	Unk,Exp,Cv,B,Sq	BC	C	12.12	15.56	4.63	5.45	15.67	6.02	10.75	3.51	9.41
BL0821	17	0	2	0	2-821-262	Indet Black	Castroville	Bl & St	P	none	P	T	F	T	F	P,Exp,Str,B,Sq	BC	C	53.05	36.18	5.99	43.26	36.18	9.68	22.23	4.54	21.19
BL0821	17	1	0	2	2-821-060	Indet Mottled	Other Point	D	P	none	R	F	F	F	F	T,Exp,Cc,Ind,Sq	BC	Ind	31.48	18.68	6.11	31.48	18.66	-	-	-	-
BL0821	17	1	0	6	2-821-319	Indet Dk Brown	Scallorn	Bl & St	O	none	P	T	T	T	F	T,Exp,Str,N/A,Sq	BC	C	21.13	12.75	3.53	14.83	11.79	6.09	12.78	3.26	8.37
BL0821	17	2	0	10	2-821-137	06-HL Tan	Pedernales	C	N	none	P	T	F	T	F	T,Exp,Cc,Sl,Sq	BC	C	54.55	27.96	8.64	37.42	27.96	16.43	18.66	8.44	16.92
BL0834	17	1	0	7	2-834-069	09-HL Tr Brown	Lange	Bl & St	P	none	P	T	F	T	F	T,Exp,Str,B,Sq	BC	C	39.46	27.91	8.4	27.92	27.87	11.09	18.38	6.05	12.84
BL0844	22	2	0	4	2-844-442	Indet Misc.	Other Arrow	P	Es	none	P	T	F	T	F	T,Exp,Cc,Ind,Ind,	BC	Ind	15.86	15.74	4.99	15.86	15.74	-	-	-	-
BL0844	22	2	0	5	2-844-451	Indet Dk Gray	Other Arrow	D	Ind	none	P	T	F	F	F	T,Exp,Ind,Ind,Ind	BC	Ind	11.8	13.61	2.07	11.8	13.61	-	-	-	-

Site	Proj.	YP	BT	Lvl	Curate No.	Lithic Material	Proj. Pt Type	Frag. Type	Brk.	Pert. Rework	Flak.	Sym.	Ser.	BT	BG	Shape (Bl, St, Bs, Sh, T)	X-sect.	Not.	L	W	T	BL	BW	SL	SW	ST	NW
BL0844	22	5	0	5	2-844-385	Indet Dk Brown	Dart	LongSeg	Im	none	P	T	F	T	F	T,Exp,Cc,Ab,N/A	BC	C	41.23	15.45	5.12	31.24	14.98	10.95	13.4	4.49	11.34
BL0844	22	10	0	3	2-844-440	Indet Dk Brown	Scallorn	P	Es	none	Ind	F	F	T	F	Unk,Exp,Cv,B,N/A	BC	C	7.95	12.56	2.81	-	-	5.38	12.56	2.81	6.55
BL0844	22	10	0	3	2-844-104	Indet White	Bonham	P	Ind	none	R	T	F	T	F	T,Exp,Cv,B,P	BC	C	28.03	21.15	4.82	21.29	19.86	5.99	6.64	2.71	6.64
BL0844	22	6	0	1	2-844-270	Indet White	Other Arrow	D	Ind	none	M	T	F	F	F	T,Exp,Cv,B,P	PC	C	21.98	14.92	3.59	18.49	14.8	3.48	4.08	2.12	4.76
BL0844	22	5	0	3	2-844-441	Indet Dk Brown	Scallorn	P	Ind	none	P	T	F	T	F	T,Exp,Str,N/A,P	BC	C	18.69	16.72	3.67	13.11	16.51	6.44	9.89	2.63	6.47
BL0844	22	6	0	1	2-844-469	Indet Lt Brown	Other Arrow	D	Ind	none	P	T	F	F	F	T,Exp,Cc,Ab,R	BC	C	20.54	8.54	2.23	20.54	8.54	-	-	-	-
BL0844	22	5	0	3	2-844-218	17-Owl Crk Black	Dart	pt Bl & St	Brn	none	R	T	F	T	F	T,Exp,Cv,Ab,R	BC	C	37.89	17.65	4.9	24.13	17.64	9.31	13.01	4.85	12.19
BL0844	22	11	0	2	2-844-105	Indet Lt Brown	Other Arrow	D	Im	none	F	T	T	F	F	T,Exp,Cc,B,R	BC	C	19.39	8.59	2.71	19.39	8.58	-	-	-	-
BL0844	22	10	0	3	2-844-439	Indet White	Scallorn	pt Bl & St	Ind	Blade	AB	T	F	T	F	T,Exp,Cc,B,R	B	C	16.96	13.07	3.72	11.59	13.04	5.69	6.48	3.11	6.08
BL0844	22	2	0	1	2-844-437	Indet Mottled	Scallorn	P	Im	none	P	T	F	T	F	T,Exp,N,B,R	PC	Bc	17.22	14.51	3.24	10.9	14.5	5.64	10.4	2.17	7.28
BL0844	22	2	0	3	2-844-139	Indet White	Scallorn	C	Ind	none	P	T	T	T	F	T,Exp,Str,B,R	BC	C	22.44	12.38	2.52	17.58	12.38	5.07	6.45	2	4.74
BL0844	22	11	0	4	2-844-102	Indet Lt Gray	Gower	P	Im	none	R	T	F	T	F	Cv,Exp,Cc,Ab,Sq	BC	C	36.21	21.3	6.68	25.54	21.13	13.05	16.84	6.35	15.29
BL0844	22	6	0	2	2-844-472	Indet Lt Brown	Other Arrow	M	Es	none	P	T	F	F	F	Unk,Exp,Cv,Ab,Sq	BC	C	12.63	11.56	2.8	12.63	11.56	-	-	-	-
BL0844	22	10	0	3	2-844-384	06-HL Tan	Other Arrow	D	Es	none	P	T	F	F	F	T,Exp,Cc,B,Sq	BC	C	15.13	9.28	2.59	15.13	9.28	-	-	-	-
BL0844	22	2	0	1	2-844-438	Indet Dk Gray	Scallorn	LongSeg	Brn	none	I	F	F	T	F	T,Exp,Cc,B,Sq	BC	C	19.51	11.94	4.28	14.23	11.88	6.6	7.97	2.96	5.24
BL0844	22	5	0	3	2-844-224	Indet Dk Brown	Scallorn	P	O	none	P	T	F	T	F	T,Exp,Cv,B,Sq	BC	C	27.13	11.8	3.28	20.12	11.76	5.92	10.85	2.32	5.87
BL0844	22	2	0	3	2-844-234	Indet Lt Brown	Other Arrow	D	Ind	none	P	T	T	F	F	L,Exp,N,B,Sq	BC	Bc	26.36	13.04	3.81	26.36	13.04	-	-	-	-
BL0844	22	2	0	1	2-844-269	Indet White	Scallorn	P	Es	none	Ind	F	F	T	F	T,Exp,N,B,Sq	BC	Bc	17.32	12.84	3.61	9.22	12.28	8.53	9.96	2.62	6.23
BL0853	17	0	0	0	2-853-009	Indet Lt Gray	Pedernales	Bl & St	Im	none	P	T	F	T	F	T,Exp,Cc,Ab,Ind	BC	C	58.77	27.27	9.59	40.55	27.33	18.96	17.27	7.99	17.19
BL0853	17	0	0	0	2-853-003	Indet Lt Brown	Bulverde	Bl & St	Im	none	P	T	F	T	F	T,Exp,Cc,Ab,R	BC	C	46.88	25.67	8.16	27.19	25.67	18.25	13.87	7.73	13.81
BL0886	17	3	0	3	2-886-036	Indet Lt Brown	Bulbar Stemmed	Bl & St	Ind	none	P	T	F	T	F	T,Exp,Cc,B,Ind	BC	C	19.49	19.93	3.6	5.84	20.18	11.39	7.57	3.19	6.18
BL0886	17	4	0	8	2-886-165	Indet White	Scallorn	St	Ind	none	P	F	F	T	F	Unk,Exp,Cc,B,R	BC	C	8.57	10.16	3.08	-	-	8.57	10.16	3.08	-
BL0886	17	3	0	3	2-886-037	Indet Lt Brown	Other Arrow	C	N	none	M	F	F	F	F	T,Exp,Cv,B,R	PC	C	22.72	2.77	14.17	-	-	-	-	-	-
BL0886	17	3	0	3	2-886-038	06-HL Tan	Other Arrow	M	Ind	none		F	F	F	F	Unk,Exp,Cv,B,R	PC	C	37.61	12.58	3.36	-	-	-	-	-	-
BL0886	17	4	0	5	2-886-047	Indet Lt Brown	Scallorn	Bl & St	Ind	none		T	F	T	F	T,Exp,I,Ab,Sq	BC	C	22.77	17.28	3.68	15.68	15.35	6.99	6.55	2.63	5.8
BL0886	17	3	0	3	2-888-153	06-HL Tan	Other Point	D	P	none	P	F	F	F	F	T,Exp,Cv,B,Sq	BC	C	21.42	14.16	3.59	-	-	-	-	-	-
BL0888	17	3	0	6	2-888-012	17-Owl Crk Black	Other Dart	pt Bl & St	O	none	Ind	F	F	T	F	Unk,Exp,Cc,Ab,P,	BC	C	39.45	20.61	6.43	24.53	21.37	13.72	13.33	4.89	-
BL0888	17	4	0	4	2-888-029	Indet Lt Brown	Scallorn	C	N	none	P	T	F	T	F	T,Exp,Str,B,P	BC	C	27.39	14.75	4.01	21.27	14.37	6.03	9.94	2.9	5.67
BL0888	17	3	0	2	2-888-103	06-HL Tan	Bulbar Stemmed	C	N	none	P	T	T	T	F	T,Exp,Cc,N/A,R	BC	C	39.12	18.64	2.94	32.14	17.27	7.2	5.71	2.31	5.15
CV0044	22	3	1	5	1-44-170	Indet Lt Gray	Other Dart	Es	Es	none	Ind	F	F	T	F	Unk,Exp,Ind,B,Ind,	BC	C	11.24	15.59	4.7	-	-	-	-	-	-
CV0044	22	3	1	3	1-44-044	17-Owl Crk Black	Ensor	P	Es	none	P	T	F	T	F	T,Exp,Cv,N/A,N/A,	BC	C	44.06	21.94	6.29	33.52	21.94	8.34	20.17	4.5	13.15
CV0044	22	3	1	6	1-44-046	08-FH Yellow	Ellis	C	N	Blade	P	F	F	T	T	T,Exp,Cc,Ab,P	B	C	37.5	24.17	5.25	27.51	23.22	8.32	18.2	3.66	14.78
CV0044	22	3	1	2	1-44-045	06-HL Tan	Palmillas	P	Ind	none	P	T	F	T	F	Unk,Exp,Str,Ab,P	BC	C	30.26	22.27	5.86	19.6	22.27	10.78	15.96	4.17	12.33
CV0044	22	2	0	6	1-44-039	Indet Dk Gray	Ellis	C	N	none	P	T	F	T	F	T,Exp,Cc,B,P	BC	C	45.87	20.5	5.38	35.82	17.96	8.92	16.53	3.96	13.26
CV0044	22	3	1	1	1-44-042	Indet Dk Brown	Ensor	pt Bl & St	Brn	none	P	F	F	T	F	Unk,Exp,Cc,B,P	BC	C	32.15	23.79	6.01	-	-	-	-	-	-
CV0044	22	3	1	4	1-44-087	Indet Dk Gray	Other Dart	M	Ind	none	Ind	F	F	F	F	Unk,Exp,Str,B,P	PC	C	23.2	14.25	6.62	-	-	-	-	-	-
CV0044	22	3	1	6	1-44-043	Indet Lt Brown	Ensor	C	O	none	P	T	F	T	F	T,Exp,Cc,Ind,R	BC	C	41.31	23.8	5.58	33.97	21.52	7.42	-	4.1	15.04
CV0044	22	3	1	3	1-44-040	14-FH Gray	Lange	C	N	none	P	T	F	T	F	T,Exp,Str,Ab,Sq	BC	Side	70.05	33.53	6.81	55.15	29.46	13.96	21.76	6.13	20.07
CV0044	22	0	1	22	1-44-041	06-HL Tan	Pedernales	P	Im	none	R	F	F	T	F	T,Exp,Cv,EB,Sq	BC	C	40.43	23.25	6.82	22.44	23.22	18.6	15.9	6.69	15.23
CV0045	22	2	3	10	1-45-136	06-HL Tan	Ensor	C	N	none	P	F	F	T	F	T,Exp,Cc,Ab,Ind,	BC	C	64.59	26.93	6.56	56.02	26.47	8.68	26.35	4.9	-
CV0046	22	3	0	2	1-46-278	Indet Misc.	Scallorn	pt Bl & St	Im	Blade	P	F	F	T	F	Unk,Exp,Cc,Ab,Ind,	BC	C	15.14	11.54	3.21	-	-	-	-	-	5.03
CV0046	22	4	0	8	1-46-107	06-HL Tan	Montell	D	Ind	none	R	T	F	T	F	T,Exp,Cc,B,N/A,	BC	C	39.19	39.62	9.42	27.71	37.58	15.95	39.61	6.72	19.14

Site	Proj.	TP	BT	Lvl	Curate No.	Lithic Material	Proj. Pt Type	Frag. Type	Brk.	Port. Rework	Flak.	Sym.	Ser.	BT	BG	Shape (Bl, St, Bs, Sh, T)	X-sect.	Not.	L	W	T	BL	BW	SL	SW	ST	NW
CV0046	22	0	1	6	1-46-140	17-Owl Crk Black	Langtry	C	N	Blade	B	F	F	T	F	T,Exp,I,Ab,P,	B	C	47.54	26.81	8	34.12	25.6	15	13.86	7.17	13.66
CV0046	22	3	0	4	1-45-106	Indet Misc.	Montell	P	Ind	none	R	T	F	T	F	T,Exp,Str,Ab,P	BC	C	56	34.17	7.06	44.44	33.88	13.57	34.18	5.96	21.65
CV0045	22	1	2	11	1-46-146	Indet Lt Gray	Pedernales	C	Ind	none	P	T	F	T	F	T,Exp,Cc,B,P	PC	C	86.09	33.67	5.61	66.02	32.16	18.79	-	5.57	17.85
CV0046	22	0	2	25	1-46-141	15-Gry/Brn/Grn	Castroville	P	Im	none	R	F	F	T	F	T,Exp,Str,B,P	BC	C	56.[illegible]	41.56	7.3	45.11	35.44	13.66	-	6.47	24.74
CV0046	22	1	2	12	1-46-147	Indet Misc.	Montell	pt Bl & St	Ind	none	F	T	F	T	F	T,Exp,Str,B,P	BC	Side	63.73	32.65	5.87	51.16	28.41	15.07	-	4.15	17.38
CV0046	22	2	3	9	1-46-266	17-Owl Crk Black	Other Dart	tang only	Ind	Ind	Ind	F	F	F	F	Unk,Exp,Str,B,P	Ind	C	14.45	13.07	3.97	-	-	-	-	-	-
CV0046	22	2	3	9	1-46-152	17-Owl Crk Black	Other Dart	M	Bu	none	P	T	F	F	F	Ov,Exp,Str,Ind,P	BC	C	49.03	25.44	6.85	49.03	25.44	-	-	-	-
CV0046	22	0	0	0	1-46-105	08-FH Yellow	Wells	C	N	none	R	T	F	T	F	T,Exp,Cv,B,R	BC	C	53.16	20.17	8.05	32.51	20.17	19.1	14.41	6.49	14.41
CV0046	22	1	2	11	1-46-261	06-HL Tan	Marshall	C	O	none	R	T	F	T	F	T,Exp,Ind,B,R	BC	C	57.72	30.72	6.99	44.65	30.03	13.98	-	6.19	17.19
CV0046	22	4	0	4	1-46-083	02-C White	Other Dart	D	Es	none	P	T	F	F	F	T,Exp,Str,B,R	BC	C	33.86	25.93	8.32	33.86	25.93	-	-	-	-
CV0045	22	2	3	9	1-46-191	Indet Misc.	Other Arrow	D	Ind	none	R	T	F	F	F	T,Exp,Cv,Ab,Sq	BC	C	18.43	10.27	3.24	16.43	10.27	-	-	-	-
CV0045	22	1	2	12	1-46-262	06-HL Tan	Marshall	pt Bl & St	Im	none	Ind	F	F	T	F	Unk,Exp,Cc,Ind,Sq	BC	Ind	45.19	43.89	8.49	32.02	43.89	12.2	16.78	6.37	15.25
CV0045	22	3	0	2	1-46-277	Indet Lt Brown	Other Arrow	P	Es	none	P	F	F	F	F	T,Exp,Cc,Ind,Sq	BC	Ind	16.45	19.38	2.4	16.46	19.38	-	-	-	-
CV0046	22	1	2	11	1-46-263	06-HL Tan	Marcos	C	N	Ind	R	T	F	T	F	T,Exp,I,R,Sq	BC	C	56.11	28.48	7.45	45.74	26.9	13.39	26.32	6.48	16.17
CV0047	22	1	0	2	1-47-057	Indet Lt Brown	Clifton	C	N	none	R	T	F	T	F	T,Exp,Cv,B,Ind,	PC	C	30.23	24.05	4.17	22.46	24.06	7.41	11.16	2.78	11.16
CV0047	22	1	0	1	1-47-056	Indet Lt Brown	Bonham	P	Ind	none	P	T	F	T	F	T,Exp,Cv,EB,P,	BC	C	22.38	17.49	3.16	13.44	12.71	7.95	17.5	2.11	5.57
CV0047	22	1	0	3	1-47-205	17-Owl Crk Black	Other Arrow	M	Ind	none	P	T	F	F	F	T,Exp,Cv,B,R	BC	C	20.96	15.94	3.04	20.82	15.5	-	-	-	4.95
CV0047	22	1	0	3	1-47-055	Indet Lt Gray	Bonham	P	Ind	none	P	T	F	T	F	T,Exp,Cv,B,Sq	FC	C	27.49	22.36	3.62	19.96	21.85	7.16	21.76	2.79	6.2
CV0047	22	2	0	3	1-47-082	Indet Dk Brown	Bonham	St & Bb	ou	none	Ind	F	F	T	F	Unk,Exp,Cv,B,Sq	BC	C	13.37	11.91	2.76	-	-	9.09	-	2.76	-
CV0047	22	1	0	10	1-47-077	Indet Lt Brown	Starr	C	O	none	F	T	F	T	F	T,Exp,N,B,Sq	BC	B	21.27	16.31	2.7	21.27	16.31	-	-	-	-
CV0048	22	2	0	5	1-48-289	Indet Misc.	Scallorn	pt Bl & St	O	none	P	F	F	T	F	Unk,Exp,Cc,B,Ind,	BC	C	17.41	14.13	3.34	-	-	-	-	-	6.94
CV0048	22	2	0	18	1-48-433	15-Gry/Brn/Grn	Alamagre	C	N	none	R	T	F	T	F	T,Exp,Cc,B,Ind,	BC	C	75.06	41.4	10.88	61.5	41.4	13.55	23.65	4.27	24.3
CV0048	22	0	1	20	1-48-104	Indet Dk Brown	Travis	P	Im	none	R	F	F	T	T	T,Exp,Cv,B,Ind,	BC	C	56.2	23.25	7.6	39.08	23.2	16.56	17.03	6.87	17.03
CV0048	22	2	0	18	1-48-434	06-HL Tan	Pedernales	P	Im	none	Ind	F	F	T	T	Unk,Exp,Ind,B,Ind,	BC	C	37.51	34.01	8.47	21.59	34.11	14.87	17.7	7.11	20.55
CV0048	22	2	0	15	1-48-412	15-Gry/Brn/Grn	Pedernales	C	Ind	none	R	T	F	T	F	T,Exp,Cv,Ab,N/A,	BC	C	69	37.73	7.8	49.67	-	19.4	17.21	5.36	18.54
CV0048	22	1	1	5	1-48-110	06-HL Tan	Pedernales	P	Im	none	R	T	F	T	F	T,Exp,Ind,Ab,N/A	BC	C	41.58	25.7	5.62	25.83	25.7	16.63	16.19	5.32	16.19
CV0048	22	2		5	1-48-291	Indet Lt Brown	Scallorn	C	N	Blade	P	T	F	T	F	T,Exp,Cc,Ab,P	BC	C	18.05	16.17	3.54	12.35	16.13	6.69	10.67	3.23	6.75
CV0048	22	2	0	18	1-48-432	17-Owl Crk Black	Pedernales	C	O	none	P	F	F	T	F	T,Exp,Cc,Ab,P	BC	C	95.28	42.34	10.71	74.54	41.4	21.99	17.66	5.98	18.86
CV0048	22	2	0	17	1-48-438	08-FH Yellow	Other Dart	D	Ind	none	P	T	F	F	F	T,Exp,Cc,B,P	SC	C	35.92	25.56	5.86	35.92	25.56	-	-	-	-
CV0048	22	0	0	0	1-48-044	17-Owl Crk Black	Andice	Barb only	Ind	none	R	T	F	T	F	P,Exp,Cv,B,P	BC	C	22.11	11.06	3.8	-	-	-	-	-	-
CV0048	22	2	0	5	1-48-290	Indet Dk Brown	Clifton	C	Ind	none	R	F	F	T	F	T,Exp,Cv,B,P	[illegible]	C	27.57	17.59	3.02	22.14		5.28	6.9	2.76	6.9
CV0048	22	3	7	1	1-48-106	08-FH Yellow	Pedernales	pt Bl & St	Ind	none	R	T	F	T	F	T,Exp,N,B,P	BC	C	43.05	31.73	8.47	32.26	31.62	-	-	6.26	17.39
CV0048	22	2	0	15	1-48-411	17-Owl Crk Black	Pedernales	P	Ind	none	R	T	F	T	F	T,Exp,N,B,P,	BC	Bc	39.82	25.69	7.37	24.3	25.69	16.14	17.92	6.81	15.75
CV0048	22	0	1	20	1-48-103	17-Owl Crk Black	Pedernales	P	Es	none	R	T	F	T	F	T,Exp,Str,B,P	BC	C	46.34	42.22	7.29	29.31	36.52	17.7	16.49	5.4	16.36
CV0048	22	2	0	2	1-48-137	17-Owl Crk Black	Other Arrow	D	Ind	none	P	T	F	F	F	T,Exp,Str,B,P	BC	C	11.35	10.32	2.52	11.35	10.32	-	-	-	-
CV0048	22	1	1	1	1-48-076	09-HL Tr Brown	Pedernales	pt Bl & St	Ind	none	R	T	F	T	F	T,Exp,Cc,EB,P	BC	C	44.44	27.26	7.43	26.33	27.28	21.39	17.73	6.45	17.73
CV0048	22	1	1	5	1-48-109	15-Gry/Brn/Grn	Pedernales	P	Ind	Blade	R	T	F	T	F	T,Exp,Cv,EB,P	BC	C	52.96	29.01	8.55	37.56	29.01	16.39	17.5	6.11	17.5
CV0048	22	3	7	1	1-48-107	18-C Mottled	Morrill	P	Ind	[illegible]	R	T	F	T	F	T,Exp,Cc,Ind,P	BC	C	50.38	23.31	8.95	32.85	-	18.23	19.78	7.6	
CV0048	22	2	0	12	1-48-453	06-HL Tan	Pedernales	C	Ind	[illegible]	R	T	F	T	F	T,Exp,Cc,Ind,P	BC	Ind	67.26	30.85	6.49	45.38	30.85	17.06	16.53	6.47	16.53
CV0048	22	2	0	5	1-48-297	Indet Misc.	Other Arrow	D	Ind	none	P	T	F	F	F	Ov,Exp,N,Ab,R	BC	B	26.64	20.61	2.98	26.64	20.61	-	-	-	-
CV0048	72	0	1	0	1-48-045	15-Gry/Brn/Grn	Bulverde	C	N	Blade	R	F	F	T	F	T,Exp,Cc,B,R	BC	C	74.96	33.04	7.14	50.1	32.12	21.44	18.6	6.72	18.05
CV0048	22	2	0	8	1-48-363	06-HL Tan	Pedernales	C	Ind	none	R	T	F	T	F	T,Exp,Cv,B,R	BC	C	58.65	26.16	7.93	42.93	26.16	16.88	21.3	7.33	21.3

Site	Proj.	TP	BT	Lvl	Curate No.	Lithic Material	Proj. Pt Type	Frag. Type	Brk.	Port. Rework	Flak.	Sym.	Ser.	BT	BG	Shape (Bl, St, Bs, Sh, T)	X-sect.	Ncl.	L	W	T	BL	BW	SL	SW	ST	NW
CV0048	22	0	0	0	1-48-043	17-Owl Crk Black	Andice	St	Im	none	P	T	F	T	F	T,Exp,Str,B,R	BC	C	21.61	19.27	6.64	-	-	21.61	19.27	6.54	-
CV0048	22	1	1	7	1-48-101	06-HL Tan	Pedernales	C	N	none	R	T	F	T	F	T,Exp,Cv,EB,R	BC	C	57.93	29.91	7.93	37.7	29.91	19.21	19.23	7.34	19.23
CV0048	22	1	1	4	1-48-097	15-Gry/Brn/Grn	Other Dart	D	P	none	R	F	F	F	F	T,Exp,Cc,Ab,Sq	BC	C	33.89	23.73	8.71	33.89	23.73	-	-	-	-
CV0048	22	2	0	11	1-48-545	17-Owl Crk Black	Lange	P	Ind	none	R	T	F	T	T	T,Exp,Cc,Ab,Sq	BC	C	31.75	29.4	5.05	23.4	-	9.38	17.48	4.07	15.44
CV0048	22	2	0	3	1-48-159	Indet Dk Gray	Pedernales	P	Im	none	R	T	F	T	F	T,Exp,Cv,Ab,Sq	BC	Ind	62.93	30.24	10.53	46.15	29.84	15.48	17.46	7.38	18.94
CV0048	22	1	1	7	1-48-195	06-HL Tan	Other Dart	St	Ind	none	Ind	F	F	T	F	Unk,Exp,Str,Ab,Sq	BC	C	28.25	21.17	6.91	-	-	-	-	-	-
CV0048	22	2	0	17	1-48-449	*	-	-	-	-	-	F	F	F	F	-,Exp,Cc,B,Sq	-	C	-	-	-	-	-	-	-	-	-
CV0048	22	3	7	4	1-48-206	Indet Lt Brown	Pedernales	pt Bl & St	Ind	none	M	F	F	T	F	Unk,Exp,Cv,B,Sq	BC	C	31.78	30.38	10.02	20.07	-	16.77	-	6.67	16.69
CV0048	22	2	0	12	1-48-479	17-Owl Crk Black	Other Dart	D	P	none	P	T	F	F	F	T,Exp,Cv,B,Sq	BC	C	23.97	20.34	5.54	23.97	20.34	-	-	-	-
CV0088	22	2	1	6	1-88-077	Indet Lt Gray	Edgewood	pt Bl & St	Im	none	Ind	F	F	T	F	Unk,Exp,Cc,Ab,P	BC	C	33.35	27.15	6.78	24.55	-	10.87	26.43	5.32	19.18
CV0088	22	1	3	3	1-88-151	06-HL Tan	Bonham	D	Ind	none	P	T	F	F	F	T,Exp,Cv,Ind,P	BC	C	45.79	20.34	3.77	37.75	-	6.57	-	2.86	-
CV0088	22	1	3	5	1-88-154	06-HL Tan	Other Arrow	M	Ind	none	P	T	F	F	F	T,Exp,Cv,Ab,Sq	BC	C	14.82	12.2	3.14	14.82	12.2	-	-	-	-
CV0090	22	2	0	17	1-90-083	06-HL Tan	Other Dart	M	Im	ind	P	F	F	T	F	T,Exp,Cc,Ind,P	BC	Ind	53.66	38.63	8.07	36.44	38.58	15.97	18.86	5.64	20.48
CV0095	17	1	1	6	1-95-038	Indet Lt Brown	Other Arrow	D	Es	none	P	F	F	F	F	T,Exp,Cc,Ab,R	BC	C	18.69	9.46	2.05	-	-	-	-	-	-
CV0095	17	3	4	6	1-95-042	17-Owl Crk Black	Dart	C	N	none	R	T	T	T	F	T,Exp,Cv,Ab,R	PC	C	31.32	17.46	4.78	23.22	16.81	8.73	10.76	4.01	10.72
CV0095	17	4	5	6	1-95-025	15-Gry/Brn/Grn	Other Arrow	Bl only	P	none	M	T	F	F	F	T,Exp,Cc,B,R	Ind	C	28.2	13.95	2.73	24.23	14.05	-	-	-	6.7
CV0095	17	1	1	7	1-95-059	06-HL Tan	Ensor	pt Bl & St	Im	none	R	T	F	T	F	T,Exp,Cc,B,R	BC	C	34.5	26.58	7.04	26.67	26.45	8.72	25.67	4.25	17.24
CV0097	17	4	4	8	1-97-269	Indet Mottled	Matamoros	C	N	none	R	F	F	F	F	T,Exp,Ind,Ab,Ind	PC	C	32.64	20.97	4.04	-	-	-	-	-	-
CV0097	17	4	4	6	1-97-291	Indet White	Scallorn	pt Bl & St	Im	none	R	T	F	T	F	T,Exp,Ind,B,Ind	BC	C	20.13	11.09	3.03	14.67	11.09	6.31	11.09	2.57	5.87
CV0097	17	6	7	16	1-97-646	Indet Dk Brown	Other Dart	M	Ind	none	Ind	F	F	F	F	T,Exp,N,B,Ind	BC	Bc	20.8	9.48	4.47	-	-	-	-	-	-
CV0097	17	4	4	7	1-97-297	Indet Lt Brown	Other Arrow	LongSeg	Ind	none	M	F	F	F	F	T,Exp,Cv,B,N/A	PC	C	14.94	15.99	2.15	-	-	-	-	-	-
CV0097	17	0	1	19	1-97-674	06-HL Tan	Pedernales	Bl & St	D	none	P	T	F	T	F	T,Exp,Cv,N/A,N/A	BC	C	81.53	29.33	9.35	67.44	29.33	13.09	17.35	6.23	16.92
CV0097	17	4	4	9	1-97-280	Indet Lt Gray	Dart	C	N	Blade	AB	T	F	T	T	T,Exp,I,Ab,P	BC	C	33.36	19.61	5.84	24.22	19.59	9.41	14.38	4.08	13.49
CV0097	17	4	4	6	1-97-286	Indet Lt Gray	Other Arrow	Barb	Ind	none	Ind	F	F	F	F	Unk,Exp,I,Ab,P	Ind	C	12.66	10.91	2.27	-	-	-	-	-	-
CV0097	17	4	4	8	1-97-1098	19-C Dr Gray	Other Point	M	P	none	Ind	F	F	F	F	Unk,Exp,Cc,B,P	BC	C	7.64	18.34	5.95	-	-	-	-	-	-
CV0097	17	10	17	27	1-97-871	08-FH Yellow	Edgewood	C	N	none	R	T	F	T	F	T,Exp,Cc,B,P	BC	C	56.3	22.88	7.23	49.59	22.9	6.37	18.79	4.73	13.23
CV0097	17	10	17	12	1-97-584	Indet Lt Brown	Ind	D	P	none	R	F	F	F	F	T,Exp,Cv,B,P	BC	C	15.69	14.53	3.65	-	-	-	-	-	-
CV0097	17	1	1	10	1-97-233	Indet Lt Gray	Bulverde	Bl & St	Im	none	R	T	F	T	T	T,Exp,Str,B,P	BC	C	35.69	31.32	8.24	36.59	31.27	18.57	15.24	8.14	16.01
CV0097	17	4	4	1	1-97-204	Indet Lt Brown	Other Arrow	C	N	none	M	F	T	T	F	T,Exp,Cc,EB,P	W	C	25.53	17.04	3.19	20.74	17.04	3.64	7.11	1.51	6.5
CV0097	17	6	0	7	1-97-408	06-HL Tan	Marcos	C	N	none	AB	T	T	T	F	T,Exp,I,Ab,R	BC	C	60.49	29.19	6.63	50.96	29.19	6.92	22.19	4.9	14.89
CV0097	17	1	1	12	1-97-262	06-HL Tan	Other Dart	C	N	none	R	F	F	T	F	T,Exp,Cv,B,R	PC	C	65.87	23.62	9.91	58.04	22.53	8.48	21.97	6.27	20.64
CV0097	17	10	17	26	1-97-865	03-AM Gray	Ensor	pt Bl & St	Im	none	P	T	F	T	T	T,Exp,Cv,B,R	PC	C	51.66	20.4	4.79	44.2	19.56	7.45	20.19	4.45	14.95
CV0097	17	9	14	29	1-97-878	Indet Lt Gray	Other Dart	St	Im	none	Ind	F	F	T	F	Unk,Exp,Ind,B,R	BC	C	12.16	21.84	5.46	-	-	8.04	21.84	5.46	-
CV0097	17	4	4	2	1-97-139	Indet Misc.	Other Arrow	Bl & St	Im	none	R	F	F	T	T	Unk,Exp,N,B,R	BC	Bc	22.94	13.67	3.23	13.8	13.67	6.6	6.13	2.68	5.69
CV0097	17	4	4	7	1-97-299	Indet Misc.	Other Arrow	D	Ind	none	P	F	F	F	F	T,Exp,Str,B,R	BC	C	25.68	15.44	3.91	-	-	-	-	-	-
CV0097	17	8	9	9	1-97-613	06-HL Tan	Pedernales	Bl & St	Im	Barbs	R	T	F	T	F	T,Exp,Str,B,R	BC	C	50.99	29.75	9.24	34.8	29.74	18.38	18.83	6.31	17.66
CV0097	17	4	4	6	1-97-984	Indet Misc.	Other Arrow	pt Bl & St	Im	none	R	T	F	T	F	T,Exp,Str,B,R	PC	C	19.92	10.39	2.69	13.19	10.05	5.49	10.44	2.12	7.97
CV0097	17	4	4	2	1-97-138	Indet Misc.	Scallorn	Bl & St	P	none	Ind	F	F	T	T	Unk,Exp,Cc,N/A,R	BC	C	11.45	13.73	3.06	-	-	4.72	10.23	2.4	7.72
CV0097	17	6	7	14	1-97-429	Indet Dk Brown	Other Dart	D	P	none	P	F	F	F	F	T,Exp,Cv,Ab,Sq	BC	C	35.78	23.36	5.61	-	-	-	-	-	-
CV0097	17	4	4	5	1-97-1098	08-FH Yellow	Fresno	P	Es	ind	Ind	F	F	F	F	Unk,Exp,Cc,B,Sq	BC	C	21.02	16.88	2.93	-	-	-	-	-	-
CV0097	17	6	0	13	1-97-511	09-HL Tr Brown	Marcos	pt Bl & St	Im	none	Ind	F	F	T	T	Unk,Exp,Cc,B,Sq	BC	C	25.72	31.59	5.53	13.78	31.28	11.01	23.37	4.27	18.27
CV0097	17	4	4	5	1-97-248	Indet Lt Brown	Scallorn	LongSeg	Im	none	P	F	T	T	T	Unk,Exp,Cv,B,Sq	BC	C	31.63	11.92	3.95	25.45	9.18	5.99	10.4	2.56	5.33

Site	Proj.	TP	BT	Lvl	Curate No.	Lithic Material	Proj. Pt Type	Frag. Type	Brk.	Port. Rework	Flak.	Sym.	Ser.	BT	BG	Shape (Bl, St, Bs, Sh, T)	X-sect.	NoL	L	W	T	BL	BW	SL	SW	ST	NW
CV0097	17	4	4	7	1-97-300	09-HL Tr Brown	Marcos	C	N	none	R	T	F	T	F	T,Exp,Cv,B,Sq	BC	C	55.85	27.99	7.05	52.6	27.99	6.73	15.42	3.36	15.37
CV0097	17	8	9	3	1-97-368	14-FH Gray	Other Point	D	Es	none	R	F	F	F	F	T,Exp,Cv,B,Sq	BC	C	26.04	17.7	4.92	-	-	-	-	-	-
CV0097	17	1	1	10	1-97-235	Indet Dk Brown	Ind	D	Es	none	P	F	F	F	F	T,Exp,N,B,Sq	BC	Bc	36.16	15.2	4.26	36.16	4.26	-	-	-	-
CV0097	17	4	4	9	1-97-273	06-HL Tan	Dart	C	N	Blade	AB	T	F	T	F	T,Exp,N,B,Sq	BC	Bc	34.72	17.84	6.66	23.9	17.82	10.61	14.54	4.65	12.48
CV0097	17	4	4	13	1-97-565	06-HL Tan	Bulverde	C	N	none	P	T	F	T	T	L,Exp,N,B,Sq	PC	Bc	70.01	27.12	8.27	51.65	27.12	16.56	14.52	8.13	15.83
CV0097	17	6	7	13	1-97-1096	Indet Dk Gray	Other Point	M	Es	none	P	F	F	F	F	Unk,Exp,Str,B,Sq	BC	C	10.24	13.23	4.22	-	-	-	-	-	-
CV0097	17	1	1	10	1-97-234	22-C Mott/Flecks	Castroville	Bl & St	Ind	none	P	T	F	T	T	P,Exp,Str,B,Sq	BC	C	55.38	51.22	6.7	45.26	51.22	12.97	25.74	6.36	22.63
CV0097	17	4	4	7	1-97-301	Indet Black	Scallorn	pt Bl & St	Ind	none	M	F	F	F	F	T,Exp,Str,B,Sq	PC	C	20.45	13.16	3.43	18.43	13.16	-	-	-	5.83
CV0097	17	6	7	14	1-97-512	06-HL Tan	Godley	C	N	none	P	F	F	T	F	T,Exp,Str,B,Sq	BC	C	67.61	30.15	8.45	55.99	30.15	10.09	23.9	5.45	20.94
CV0097	17	7	7	14	1-97-609	06-HL Tan	Castroville	Bl & St	P	none	R	T	F	T	T	T,Exp,Str,Ind,Sq	BC	C	38.33	36.82	7.38	28.87	36.77	9.95	21.65	4.68	21.39
CV0097	17	4	4	4	1-97-162	Indet Lt Brown	Other Arrow	D	Es	none	Ind	F	F	F	F	Unk,Exp,Ind,Sl,Sq	BC	C	11.64	7.19	1.88	-	-	-	-	-	-
CV0099	22	2	0	11	1-99-078	18-C Mottled	Other Dart	pt Bl & St	Im	none	Ind	T	F	T	F	Unk,Exp,Ind,B,Ind	BC	C	44.2	24.74	9.12	24.33	24.53	21.02	15.55	9.08	14.98
CV0099	22	2	0	13	1-99-090	Indet Lt Brown	Other Dart	pt Bl & St	Bm	Ind	Ind	F	F	T	T	Unk,Exp,Cc,Ab,P	BC	C	28.3	23.82	6.92	-	-	12.77	17.56	6.7	16.15
CV0099	22	1	0	10	1-99-043	15-Gry/Brn/Grn	Bulverde	P	P	none	R	T	F	T	F	T,Exp,Str,B,P	BC	C	46.55	36.01	8.86	29.25	36.01	15.19	17.49	7.11	16.63
CV0099	22	1	0	11	1-99-049	Indet Mottled	Other Dart	D	Ind	none	P	T	F	F	F	T,Exp,Str,B,P	BC	C	50.87	20.3	7.42	50.87	20.3	-	-	-	-
CV0099	22	2	0	17	1-99-116	08-FH Yellow	Other Dart	M	Ind	Blade	R	F	F	F	F	Unk,Exp,Str,B,R	BC	C	26.52	30.91	5.97	-	-	-	-	-	-
CV0099	22	2	0	3	1-99-052	06-HL Tan	Ensor	C	Ind	none	P	F	T	T	F	T,Exp,Cv,B,Sq	BC	C	45.26	21.11	5.68	37.53	19.24	-	-	-	16.03
CV0115	22	3	0	3	1-115-084	06-HL Tan	Other Dart	D	Es	none	R	T	F	F	F	T,Exp,Cc,EB,Ind	BC	C	26.19	26.42	8.35	26.19	26.42	-	-	-	-
CV0115	22	3	0	3	1-115-106	15-Gry/Brn/Grn	Perdiz	pt Bl & St	Es	none	P	F	F	T	F	Unk,Exp,Cv,B,Ind	PC	C	22.27	18.18	2.79	-	-	14.66	6.58	2.34	6.58
CV0115	22	3	0	6	1-115-036	06-HL Tan	Uvalde	C	Ind	none	P	T	F	T	F	T,Exp,Str,B,Ind	BC	C	61.46	21.75	7.44	50.22	21.85	9.46	17.43	6.52	12.9
CV0115	22	3	0	5	1-115-020	Indet Misc.	Scallorn	C	Ind	none	P	T	F	T	F	T,Exp,Str,B,P	BC	C	23.95	16.33	3.52	17.77	15.71	6.89	9.38	2.63	7.01
CV0115	22	3	0	6	1-115-035	Indet Lt Brown	Other Dart	D	Ind	Ind	P	T	F	F	F	T,Exp,Cv,B,R	BC	C	35.86	24.56	6.62	35.86	24.56	-	-	-	-
CV0115	22	3	0	6	1-115-101	15-Gry/Brn/Grn	Other Arrow	D	Ind	none	P	T	F	F	F	T,Exp,Cv,B,R	PC	C	20.99	13.88	2.54	20.99	13.88	-	-	-	-
CV0115	22	3	0	3	1-115-231	17-Owl Crk Black	Other Arrow	D	P	none	P	T	T	F	F	Unk,Exp,N,Ind,Sq	BC	B	26.19	10.99	3.16	26.19	10.99	-	-	-	-
CV0117	22	2	12	7	1-117-055	15-Gry/Brn/Grn	Kent	C	N	none	R	T	F	T	F	T,Exp,Str,B,Ind	BC	C	50.62	21.18	8.59	32.42	21.25	19.55	13.54	7.45	13.54
CV0117	22	2	12	3	1-117-022	Indet Lt Gray	Pedernales	Bs	Ind	none	Ind	F	F	T	F	Unk,Exp,Cc,Ab,P	BC	C	17.76	17.62	7.26	-	-	13.15	16.67	5.22	-
CV0117	22	4	0	8	1-117-092	Indet Lt Brown	Kent	C	N	none	P	T	F	T	F	T,Exp,Cc,EB,R	BC	C	51.88	21.02	8.24	36.59	20.76	14.56	14.24	5.93	14.24
CV0117	2[illegible]	[illegible]	12	2	1-117-015	17-Owl Crk Black	Other Dart	D	Es	none	P	T	F	F	F	T,Exp,Cv,Ab,Sq	BC	C	19.99	21.48	5.47	19.99	21.48	-	-	-	-
CV0117	22	4	0	6	1-117-079	Indet Lt Brown	Bulverde	C	N	Blade	P	T	F	T	F	T,Exp,Cc,Si,Sq	BC	C	47.38	30.66	7.31	29.06	30.59	18.81	18.45	5.99	18.45
CV0124	16	0	0	0	1-124-160	06-HL Tan	Other Dart	pt Bl & St	Im	Ind	AB	F	F	T	F	T,Exp,Cc,EB,R		C		29.23	-	18.41	29.48	12.24	16.95	-	15.59
CV0125	22	2	0	3	1-125-026	Indet Lt Brown	Other Dart	M	Es	none	P	T	F	F	F	Unk,Exp,Cv,N/A,R	BC	C	57.71	35.18	8.13	57.71	35.18	-	-	-	-
CV0137	17	1	0	3	1-137-119	06-HL Tan	Marcos	Bl & St	Im	none	P	F	F	T	T	Unk,Exp,Ind,B,Ind,	BC	C	38.18	28.4	5.82	27.33	28.4	10.84	21.74	4.92	15.89
CV0137	17	2	0	13	1-137-144	Indet Lt Brown	Other Dart	St	P	none	P	F	F	T	F	Unk,Exp,Ind,B,Ind,	BC	C	16.16	20.44	8.49	-	-	16.16	20.44	8.49	-
CV0137	17	1	0	10	1-137-225	19-C Dr Gray	Other Dart	St	Ind	none	Ind	F	F	T	F	Unk,Exp,Str,B,Ind,	BC	C	23.97	23.43	4.79	8.53	22.91	13.92	19.2	4.5	19.26
CV0137	17	1	0	5	1-137-114	Indet Lt Brown	Other Arrow	pt Bl & St	Ind	none	R	T	F	F	F	T,Exp,Cv,B,N/A	PC	C	14.49	14.74	2.71	11.63	14.49	27	6.92	2.03	6.92
CV0137	17	2	0	1	1-137-115	06-HL Tan	Pedernales	St	Im	none	P	F	F	T	F	Unk,Exp,Cv,B,N/A	BC	C	19.78	20.17	5.74	-	-	19.78	20.17	5.74	-
CV0137	17	0	1	0	1-137-075	08-FH Yellow	Marshall	Bl & St	P	none	F	T	F	T	F	T,Exp,Cc,Ab,P	BC	C	44.14	35.5	8.08	31.68	35.5	10.31	22.71	6.24	20.34
CV0137	17	1	0	8	1-137-147	15-Gry/Brn/Grn	Ensor	C	N	none	P	T	F	T	T	T,Exp,Cc,Ab,P	BC	C	48.88	26.65	6.53	34.95	26.65	9.72	21.08	4.86	18.75
CV0137	17	0	1	0	1-137-066	08-FH Yellow	Castroville	Bl & St	Ind	none	R	F	F	T	F	Unk,Exp,Cc,B,P	BC	C	42.04	47.2	7.45	28.06	47.2	12.22	24.77	5.01	21.47
CV0137	17	1	0	3	1-137-088	17-Owl Crk Black	Lange	Bl & St	P	none	R	T	F	T	F	T,Exp,Cc,B,P	BC	C	31.26	32.41	5.64	21.16	32.41	10.15	17.3	3.89	14.28
CV0137	17	1	0	4	1-137-106	08-FH Yellow	Dart	Bl & St	Bu	Blade	Ind	F	F	T	F	T,Exp,Cc,B,P	BC	C	37.27	18.54	5.89	25.61	18.54	9.61	14.16	5.22	12.35
CV0137	17	1	0	6	1-137-141	Indet Black	Other Dart	C	Ind	Blade	P	F	F	T	T	T,Exp,Cc,B,P	BC	C	43.79	34.74	7.71	30.03	34.74	11.79	21.95	5.58	18.42

Site	Proj.	TP	BT	Lvl	Curate No.	Lithic Material	Proj. Pt Type	Frag. Type	Brk.	Port. Rework	Flak.	Sym.	Ser.	BT	BG	Shape (Bl, St, Bs, Sh, T)	X-sect.	Not.	L	W	T	BL	BW	SL	SW	ST	NW
CV0137	17	0	1	0	1-137-069	13-ER Flecked	Castroville	C	N	none	R	T	F	T	F	T,Exp,Cv,B,P	BC	C	54.2	31.35	6.37	43.55	31.35	8.98	25.02	4.58	23.4
CV0137	17	2	0	10	1-137-143	Indet Misc.	Dart	Bl & St	O	none	R	F	F	T	F	T,Exp,Cv,B,P	BC	C	45.19	17.67	6.13	30.21	17.67	15.41	13.71	6.11	12.21
CV0137	17	2	0	16	1-137-197	08-FH Yellow	Other Dart	C	Im	none	R	F	F	F	F	T,Exp,Cv,B,P	BC	C	41.68	22.69	7.42	41.68	22.69	-	-	-	-
CV0137	17	0	1	0	1-137-067	14-FH Gray	Castroville	Bl & St	P	none	P	F	F	T	F	Unk,Exp,St,B,P	BC	C	30.9	40.1	8.78	14.5	40.1	16.69	18.45	6.48	18.39
CV0137	17	0	1	0	1-137-076	06-HL Tan	Castroville	Bl & St	P	none	R	F	F	T	F	Unk,Exp,St,B,P	BC	C	29.47	37.48	7.96	17.42	37.48	11.86	19.5	6.71	17.08
CV0137	17	1	0	4	1-137-09[illegible]	Indet Lt Brown	Pedernales	pt Bl & St	O	none	Ind	T	F	T	F	T,Exp,St,B,P	BC	C	50.62	29.88	7.96	32.41	28.88	16.35	20.84	7.28	20.84
CV0137	17	1	0	4	1-137-103	Indet Dk Brown	Pedernales	Bl & St	Ind	none	P	T	F	F	F	T,Exp,St,B,P	BC	Side	52.19	30.08	8.07	30.63	30.08	21.96	18.41	6.62	18.75
CV0137	17	2	1	23	1-137-146	08-FH Yellow	Marcos	Bl & St	P	none	P	F	F	T	F	F,Exp,St,B,P	BC	Side	41.75	35.21	7.07	30.33	35.21	10.74	19.26	5.62	15.65
CV0137	17	2	0	12	1-137-149	06-HL Tan	Pedernales	Bl & St	Ind	none	P	T	F	T	F	T,Exp,St,B,P	BC	C	74.54	25.41	8.27	58.38	25.41	15.85	15.14	7.88	16.17
CV0137	17	0	1	0	1-137-064	06-HL Tan	Castroville	Bl & St	P	none	P	T	F	T	F	T,Exp,Cv,B,R	BC	C	31.44	35.31	5.94	17.42	35.31	13.59	24.24	5.61	21.73
CV0137	17	1	0	4	1-137-096	11-ER Flat	Marshall	Bl & St	Im	none	P	T	F	T	F	T,Exp,Cv,B,R	BC	B	55.25	40.45	8.11	39.9	40.45	14.29	26.66	6.04	22.18
CV0137	17	2	0	1	1-137-277	17-Owl Crk Black	Other Dart	M	Ind	none	P	F	F	F	F	Unk,Exp,Cv,B,R	BC	C	23.69	27.74	5.69	-	-	-	-	-	-
CV0137	17	0	1	0	1-137-065	Indet Lt Gray	Other Dart	Bl & St	Im	none	P	T	F	T	F	T,Exp,St,B,R	BC	C	40.09	35.31	6.29	29.06	35.31	11.3	13.58	4.57	19.58
CV0137	17	0	1	0	1-137-068	09-HL Tr Brown	Montell	Bl & St	Im	none	P	T	F	T	F	T,Exp,St,B,R	BC	C	49.84	25.49	5.62	34.23	25.49	12.25	21.23	4.55	17.91
CV0137	17	1	0	4	1-137-097	06-HL Tan	Dart	Bl & St	Im	none	P	T	T	T	F	P,Exp,Cc,Ind,R	BC	C	42.61	17.35	5.84	30.97	17.35	10.35	13.62	4.86	13.27
CV0137	17	2	0	15	1-137-148	06-HL Tan	Pedernales	Bl & St	Ind	none	P	T	F	T	F	P,Exp,Cc,Ind,R	BC	Ind	52.09	26.25	8.65	37.31	26.25	14.25	16.26	7.73	15.87
CV0137	17	0	1	0	1-137-073	08-FH Yellow	Castroville	Bl & St	Ind	none	F	T	F	T	F	T,Exp,Cv,Ind,R	BC	Ind	41.37	35.94	7.9	30.2	35.94	12.35	21.1	4.6	18.42
CV0137	17	1	0	4	1-137-122	14-FH Gray	Bulverde	Bl & St	Im	none	P	T	F	T	F	L,Exp,Cv,Ind,R	BC	Ind	71.35	23.43	7.58	54.55	23.7	14.22	13.89	6.3	13.74
CV0137	17	0	1	0	1-137-072	15-Gry/Brn/Grn	Pedernales	Bl & St	Im	none	P	T	F	T	F	T,Exp,St,Ind,R	BC	Ind	35.07	28.48	6.1	22.13	28.48	10.7	15.44	5.33	15.13
CV0137	17	1	0	4	1-137-105	Indet Dk Gray	Montell	Bl & St	N	none	P	T	F	T	T	P,Exp,Cc,N/A,[illegible]	[illegible]	C	32.03	34.45	6.1	19.57	34.45	11.13	22.62	4.84	18.43
CV0137	17	1	0	5	1-137-206	08-FH Yellow	Marshall	Bl & St	Es	none	P	T	F	T	T	T,Exp,Cv,Ab,Sq	[illegible]	C	51.55	37.35	7.87	38.15	37.35	10.8	19	6.43	16.71
CV0137	17	2	0	12	1-137-241	06-HL Tan	Other Dart	U	Ind	none	R	F	F	F	F	Unk,Exp,Cv,Ab,Sq	BC	C	16.54	19.24	8.06	-	-	-	-	-	-
CV0137	17	1	0	11	1-137-145	08-FH Yellow	Ensor	C	N	none	P	T	F	T	F	T,Exp,Cc,B,Sq	BC	C	43.12	21.25	5.29	34.39	20.26	7.89	21.25	4.7	16.05
CV0137	17	0	1	0	1-137-154	06-HL Tan	Montell	Bl & St	P	none	P	T	F	T	F	T,Exp,Cc,B,Sq	BC	C	40.47	44.87	6.71	28.65	44.87	11.56	22.71	3.62	22.21
CV0137	17	1	0	9	1-137-158	Indet Dk Gray	Bulverde	Bl & St	P	none	P	T	F	T	T	T,Exp,Cc,B,Sq	BC	C	46.93	27.4	8.42	29.87	27.4	15.3	14.22	6.83	15.28
CV0137	17	1	0	1	1-137-050	Indet Dk Gray	Other Dart	pt Bl & St	Ind	none	R	F	F	T	F	Unk,Exp,Cv,B,Sq	BC	C	33.85	24.27	8.37	22.13	18	13.28	23.66	5.61	20.3
CV0137	17	1	0	8	1-137-153	17-Owl Crk Black	Edgewood	Bl & St	Im	none	P	T	F	T	T	T,Exp,Cv,B,Sq	BC	C	43.26	24.45	5.83	33.3	24.45	8.81	15.53	3.47	12.7
CV0137	17	1	0	4	1-137-095	09-HL Tr Brown	Bulverde	Bl & St	Ind	Blade	P	T	F	T	T	T,Exp,N,B,Sq	BC	Bc	38.71	29.36	6.39	24.03	29.36	12.16	15.54	5.7	17.37
CV0137	17	0	1	0	1-137-071	09-HL Tr Brown	Castroville	LongSeg	Im	none	P	F	F	T	T	T,Exp,St,B,Sq	W	B	35.84	23.11	6.13	24.77	23.11	11.74	13.04	5.82	-
CV0137	17	0	1	0	1-137-074	Indet Trans	Castroville	Bl & St	Im	none	P	F	F	T	F	T,Exp,St,B,Sq	BC	B	25.41	34.53	8.21	18.09	34.53	11.02	23.26	6.3	20.17
CV0137	17	1	0	2	1-137-086	Indet Black	Castroville	pt Bl & St	O	none	Ind	F	F	T	T	Unk,Exp,St,B,Sq	BC	C	28.81	28.64	5.94	15.9	28.64	12.8	21.32	5.59	18.11
CV0137	17	2	0	5	1-137-138	Indet Lt Brown	Pedernales	Bl & St	Ind	none	R	F	F	T	F	T,Exp,St,B,Sq	BC	C	31.39	28.86	7.02	15.93	28.86	14.88	16.88	5.27	16.99
CV0137	17	2	0	10	1-137-142	Indet Misc.	Other Dart	St	Ind	none	P	F	F	T	F	Unk,Exp,St,B,Sq	BC	C	22.67	19.25	7.12	-	-	13.31	19.3	7.32	-
CV0137	17	1	0	9	1-137-157	06-HL Tan	Pedernales	Bl & St	Im	none	P	F	F	T	F	T,Exp,St,B,Sq	BC	C	45.63	31.34	7.01	29.08	29.14	14.65	20.8	6.61	20.1
CV0174	17	2	4	1	1-174-021	Indet Dk Gray	Bonham	pt Bl & St	Ind	none	P	T	T	T	F	T,Exp,Cc,B,Ind	BC	C	24.73	11.56	3.74	17.86	11.56	5.85	5.98	2.89	5.18
CV0174	17	5	0	10	1-174-185	18-C Mottled	Pedernales	Bl & St	Im	none	F	T	F	T	F	T,Exp,Cc,B,Ind	BC	C	66.03	26.54	7.95	45.91	26.54	16.44	19.44	8.12	17.53
CV0174	17	5	0	12	1-174-190	06-HL Tan	Andice	pt Bl & St	Ind	none	P	F	F	T	F	Unk,Exp,Cv,N/A,N/A	BC	C	38.13	27.6	6.85	16.65	27.09	21.25	17.6	6.75	18.31
CV0174	17	7	7	9	1-174-240	06-HL Tan	Wilson	Bl & St	Es	none	R	T	F	T	F	P,Exp,St,Ab,P	BC	C	28.51	20.25	8.11	15.57	20.22	11.71	17.6	7.29	13.37
CV0174	17	1	1	9	1-174-086	Indet Dk Brown	Edgewood	Bl & St	Ind	none	P	T	T	T	F	T,Exp,Cv,B,P	BC	C	30.64	19.76	5.19	20.63	19.76	7.68	15.58	4.08	11.47
CV0174	17	2	4	4	1-174-049	14-FH Gray	Scallorn	Bl & St	Im	none	P	T	F	T	F	T,Exp,St,B,P	BC	C	26.05	15.56	3.18	20.95	15.42	3.7	9.81	2.34	7.6
CV0174	17	1	1	14	1-174-144	15-Gry/Brn/Grn	Ensor	Bl & St	Im	none	P	T	T	T	F	T,Exp,St,B,P	BC	C	31.21	20.13	5.51	21.04	18.78	8.59	19.77	5.1	14.01
CV0174	17	6	3	7	1-174-216	Indet Lt Brown	Nolan	St	Ind	Stem	P	F	F	T	F	Unk,Exp,St,Ab,R	B	C	12.35	17.56	5.94	-	-	12.35	17.56	5.94	-

Site	Proj.	TP	BT	Lvl	Curate No.	Lithic Material	Proj. Pt Type	Frag. Type	Brk.	Port. Rework	Flak.	Sym.	Ser.	BT	BG	Shape (Bl, St, Bs, Sh, T)	X-sect.	Not.	L	W	T	BL	BW	SL	SW	ST	NW
CV0174	17	5	0	10	1-174-180	06-HL Tan	Pedernales	Bl & St	Ind	Barbs	P	T	F	T	F	P,Exp,Cv,B,R	BC	C	38.01	40.27	9.05	18.59	40.27	18.41	18.09	5.26	16.76
CV0174	17	1	1	14	1-174-143	08-FH Yellow	Edgewood	pt Bl & St	Im	none	R	F	F	T	F	Unk,Exp,Str,B,R	BC	C	16.42	23.61	6.12	4.3	23.22	9.46	18.45	4.71	17.3
CV0174	17	5	0	12	1-174-192	14-FH Gray	Bulverde	Bl & St	Im	none	P	T	F	T	F	L,Exp,Cc,Ab,Sq	BC	C	57.02	26.98	8.19	35.07	26.98	18.41	14.74	7.91	15.47
CV0174	17	7	7	10	1-174-251	15-Gry/Brn/Grn	Other Dart	M	Ind	Ind	R	F	F	F	F	Unk,Exp,Cv,B,Sq	BC	C	31.18	22.64	7.77	-	-	-	-	-	-
CV0174	17	7	7	11	1-174-259	19-C Dr Gray	Other Dart	P	Es	Ind	Ind	F	F	F	F	Unk,Exp,Cc,Sl,Sq	BC	C	12.24	20.63	4.56	-	-	-	-	-	-
CV0184	22	1	1	2	1-184-065	17-Owl Crk Black	Dart	C	Brn	Blade	AB	T	F	T	F	T,Exp,Cv,Ind,N/A,	B	Ind	53.84	19.25	5.7	42.02	19.29	9.75	[illegible]	3.82	11.57
CV0184	22	1	1	4	1-184-075	Indet Lt Gray	Other Dart	pt Bl & St	Im	none	P	T	F	F	F	T,Exp,Cv,RR	BC	Side	37.24	23.18	4.7	28.86	22.9	-	-	-	12.98
CV0184	22	2	1	3	1-184-033	15-Gry/Brn/Grn	Dart	Bs	Ind	none	Ind	F	F	T	F	Unk,Exp,Str,Ab,Sq	BC	C	14.62	16.11	5.28	-	-	14.62	16.11	5.28	-
CV0184	22	2	1	27	1-184-140	02-C White	Other Dart	P	Im	Bl & brb	Ind	F	F	T	T	Unk,Exp,Cc,B,Sq	BC	C	28.54	22.94	6.98	18.07	22.82	10.35	21.91	4.74	14.92
CV0184	22	2	1	3	1-184-034	06-HL Tan	Dart	C	N	Blade	P	T	F	T	F	T,Exp,Cv,B,Sq	BC	C	35.03	20.59	5.14	22.83	20.61	11.7	14.13	4.48	13.83
CV0184	22	2	1	4	1-184-040	15-Gry/Brn/Grn	Other Dart	D	Es	none	R	T	F	F	F	T,Exp,Cv,B,Sq	BC	C	33.33	29.25	6.19	33.33	29.25	-	-	-	-
CV0184	22	2	1	4	1-184-041	06-HL Tan	Lange	P	Ind	none	R	T	F	T	F	Unk,Exp,Cv,B,Sq	BC	C	36.58	30.28	7.57	22.91	27.21	12.45	19.55	6.77	15.82
CV0240	22	0	0	0	1-240-051	03-AM Gray	Martindale	P	Im	none	R	T	F	T	F	T,Exp,Cv,B,Sq	BC	C	39.57	25.93	6.66	29.14	25.83	9.68	22.11	5.01	14.87
CV0317	22	5	0	18	1-317-334	06-HL Tan	Other Arrow	D	Brn	none	R	F	F	F	F	T,Ind,Ind,Ind,Ind	BC	Ind	18.42	15.93	3.47	18.42	15.93	-	-	-	-
CV0317	22	8	0	8	1-317-191	06-HL Tan	Other Dart	D	Ind	none	P	T	F	F	F	T,Exp,Str,B,P	BC	C	78.07	19.25	6.46	-	-	-	-	-	-
CV0317	22	1	1	8	1-317-236	Indet Misc.	Other Dart	tang only	Ind	none	P	F	F	F	F	Unk,Exp,Cc,Ab,R	BC	C	16.78	8.55	3.3	-	-	-	-	-	-
CV0317	22	5	0	17	1-317-331	Indet Mottled	Ind	P	Ind	none	R	T	F	T	F	Unk,Exp,Cc,B,R	PC	C	14.2	16.86	2.66	-	-	-	-	-	-
CV0317	22	5	0	20	1-317-070	Indet Lt Brown	Other Arrow	D	Es	none	P	T	F	F	F	T,Exp,Cv,B,Sq	BC	C	27.92	15.98	2.93	27.92	15.98	-	-	-	-
CV0317	22	5	0	18	1-317-326	06-HL Tan	Other Arrow	D	P	none	P	F	F	F	F	Unk,Exp,Cv,B,Sq	BC	C	20.86	19.17	3.29	-	-	-	-	-	-
CV0317	22	6	0	17	1-317-033	06-HL Tan	Castroville	C	N	Blade	R	F	F	T	F	T,Exp,Str,B,Sq	PC	C	56.75	37.38	8.47	44.99	-	12.2	25.18	5.04	20.36
CV0317	22	5	0	20	1-317-071	Indet Lt Brown	Scallorn	C	N	none	P	T	F	T	F	T,Exp,Str,B,Sq	BC	C	24.97	12.53	2.66	20.07	12.46	3.98	10.13	1.86	6.17
CV0317	22	5	0	17	1-317-082	Indet White	Fresno	P	Ind	none	P	T	F	T	F	T,Exp,Str,Ind,Sq	BC	C	26.72	17.59	4.1	-	-	-	-	-	-
CV0317	22	5	0	9	1-317-308	Indet Misc.	Other Dart	M	Es	none	P	T	F	F	F	Unk,Exp,Str,Sl,Sq	PC	C	21.73	18.89	6.49	21.73	18.89	-	-	-	-
CV0332	22	1	1	2	1-332-004	Indet Lt Brown	Other Dart	M	Es	none	P	T	F	F	F	Unk,Ind,Ind,Ind,Ind	BC	Ind	23.96	23.1	6.48	23.96	23.1	-	-	-	-
CV0379	22	4	0	9	1-379-114	15-Gry/Brn/Grn	Frio	pt Bl & St	Es	none	Ind	F	F	F	F	Unk,Ind,Ind,B,Ind	BC	C	25.38	25.04	8.11	12.68	25.04	12.14	-	6.36	15.26
CV0379	22	0	2	4	1-379-084	06-HL Tan	Bulverde	C	N	Blade	R	F	F	T	F	T,Ind,Ind,Ind,Ind	PC	Ind	71.63	23.93	9.11	56.13	23.89	19.15	14.05	0.73	14.05
CV0379	22	1	0	2	1-379-022	Indet Dk Brown	Other Dart	C	N	Bl & brb	R	T	F	T	F	Cv,Ind,Ind,Ind,Ind	BC	C	56.73	[illegible]	6.93	39.41	25.87	16.51	14.99	6.09	15.69
CV0380	22	1	0	3	1-380-047	Indet Dk Gray	Lange	pt Bl & St	Brn	none	R	T	F	T	F	Unk,Ind,Ind,B,Ind	BC	C	27.12	23.86	6.88	15.78	23.51	9.34	15.04	4.79	12.64
CV0380	22	1	0	1	1-380-012	Indet White	Other Arrow	D	Es	none	R	T	F	F	F	T,Ind,Ind,Ind,Ind	BC	Ind	19.38	12.42	2.49	19.38	12.42	-	-	-	-
CV0380	22	1	0	1	1-380-013	Indet Lt Brown	Other Arrow	D	Ind	none	R	T	F	F	F	Unk,Ind,Ind,Ind,Ind	BC	Ind	19.43	8.93	2.12	19.48	8.93	-	-	-	-
CV0380	22	1	0	1	1-380-015	Indet Lt Brown	Scallorn	C	N	Blade	B	F	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	28.42	15.17	3.27	21.05	11.23	8.24	15.24	2.2	6.07
CV0380	22	1	0	3	1-380-028	Indet Lt Brown	Dart	St	Ind	none	Ind	F	F	T	T	Unk,Ind,Ind,Ind,Ind	BC	Ind	16.2	17.89	5.44	-	-	16.2	17.89	5.44	-
CV0380	22	1	0	1	1-380-014	Indet Lt Gray	Other Dart	pt Bl & St	Brn	none	Ind	F	F	T	F	Unk,Ind,Ind,N/A,N/A	BC	C	22.68	21.33	6.47	-	-	-	-	-	-
CV0389	22	2	1	8	1-389-154	09-HL Tr Brown	Castroville	C	N	Blade	AB	F	F	T	T	T,Ind,Ind,B,Ind	B	C	44.11	41.57	8.52	32.1	40.4	12.78	20.66	7.05	18.8
CV0389	22	2	1	2	1-389-094	Indet White	Montell	P	Ind	none	Ind	F	F	T	F	Unk,Ind,Ind,B,Ind	BC	C	32.11	31.06	5.67	20.57	-	12.58	22.93	5.65	18.79
CV0389	22	1	2	18	1-389-165	17-Owl Crk Black	Other Dart	M	Ind	none	R	T	F	F	F	T,Ind,Ind,B,Ind	BC	C	22.38	19.51	5.64	22.38	19.51	-	-	-	-
CV0389	22	2	1	4	1-389-107	15-Gry/Brn/Grn	Castroville	C	Nt	none	P	T	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	64.35	40.58	8.57	51.34	-	11.5	[illegible]	[illegible]	21.29
CV0389	22	2	1	5	1-389-114	Indet Lt Brown	Ind	D	Es	none	P	T	F	F	F	T,Ind,Ind,Ind,Ind	BC	Ind	13.12	6.85	2.73	13.12	6.85	-	-	-	-
CV0389	22	2	1	5	1-389-116	09-HL Tr Brown	Ellis	C	Brn	none	P	T	F	T	T	T,Ind,Ind,Ind,Ind	BC	Ind	39.9	22.48	5.87	32.28	22	7.38	17.79	4.71	12.44
CV0389	22	2	1	19	1-389-1[illegible]	15-Gry/Brn/Grn	Other Dart	D	Es	none	P	T	F	F	F	T,Ind,Ind,Ind,Ind	BC	Ind	25.31	19.2	6.18	25.31	19.2	-	-	-	-
CV0389	22	1	2	18	1-389-164	Indet Lt Gray	Dart	P	Im	none	P	F	F	T	F	Unk,Ind,Ind,Ind,Ind	BC	Ind	29.99	22.05	5.76	20.4[illegible]	-	9.48	-	4.33	14.22
CV0389	22	2	1	24	1-389-186	Indet Dk Brown	Other Dart	M	Ind	none	R	T	F	F	F	T,Ind,Ind,Ind,Ind	BC	Ind	16.91	23.85	3.99	16.91	23.85	-	-	-	-

Site	Proj.	TP	BT	Lvl	Curate No.	Lithic Material	Proj. Pt Type	Frag. Type	Brk.	Pct. Rework	Flak.	Sym.	Ser.	BT	BG	Shape (Bl, St, Bs, Sh, T)	X-sect	Nol.	L	W	T	BL	BW	SL	SW	ST	NW
CV0403	22	2	6	5	1-403-301	06-HL Tan	Montell	P	Ind	none	R	T	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	43.76	32.63	6.28	30.72	31.42	12.72	32.21	4.88	17.95
CV0403	22	2	6	6	1-403-324	08-FH Yellow	Other Dart	pt Bl & St	Ind	none	Ind	F	F	F	F	Unk,Ind,Ind,Ind,Ind	BC	Ind	31.46	30.76	7.93	-	-	-	-	-	-
CV0403	22	1	7	6	1-403-325	06-HL Tan	Pedernales	P	Ind	none	R	T	F	T	F	T,Ind,Ind,Ind,Ind	BC	C	68.13	25.05	8.83	47.06	24.83	21.13	19.9	6.6	17.95
CV0403	22	0	6	0	1-403-326	14-FH Gray	Other Dart	M	Ind	none	R	F	F	F	F	T,Ind,Ind,Ind,Ind	BC	Ind	28.99	39.73	7.01	28.99	39.73	-	-	-	17.62
CV0403	22	1	7	4	1-403-327	Indet Dk Gray	Pedernales	C	N	none	P	T	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	62.52	25.1	9.96	41.93	25.01	20.25	18.95	9.96	19.52
CV0403	22	2	6	9	1-403-330	14-FH Gray	Other Dart	D	Ind	none	P	T	F	F	F	T,Ind,Ind,Ind,Ind	SC	Ind	26.58	30.99	8.21	26.56	30.99	-	-	-	-
CV0403	22	2	6	5	1-403-356	06-HL Tan	Scallorn	C	N	none	P	F	F	T	F	T,Ind,Ind,Ind,Ind	PC	Ind	31.06	15.76	4.45	24.71	15.19	5.09	15.77	3.79	6.24
CV0403	22	2	6	6	1-403-359	09-HL Tr Brown	Castroville	C	Ind	Bl & brb	R	T	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	41.34	30.85	8.3	29.12	-	14.58	-	5.77	20.79
CV0403	22	2	6	9	1-403-360	08-FH Yellow	Other Dart	pt Bl & St	Ind	Ind	Ind	F	F	F	F	Unk,Ind,Ind,Ind,Ind	Ind	Ind	25.16	17.77	5.93	-	-		-	-	-
CV0403	22	2	6	9	1-403-361	08-FH Yellow	Castroville	pt Bl & St	Ind	none	Ind	F	F	T	F	Unk,Ind,Ind,Ind,Ind	BC	Ind	37.85	33.55	6.84	24.8	-	13.63	-	4.89	19.34
CV0403	22	1	7	3	1-403-362	09-HL Tr Brown	Castroville	pt Bl & St	Ind	Ind	Ind	F	F	T	T	Unk,Ind,Ind,Ind,Ind	BC	Ind	34.08	33.7	7.37	-	-	16.8	-	7.34	23.83
CV0403	22	2	6	5	1-403-366	17-Owl Crk Black	Castroville	C	Ind	none	P	T	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	65.5	36.63	7.26	50.3	34.38	14.45	-	5.97	22.78
CV0403	22	0	6	15	1-403-368	06-HL Tan	Morrill	C	N	none	R	T	F	T	F	T,Ind,Ind,Ind,Ind	BC		71.3	21.93	10.88	56.47	21.39	14.74	14.14	6.02	14.52
CV0403	22	0	6	4	1-403-369	09-HL Tr Brown	Marshall	pt Bl & St	Im	none	P	F	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	45.19	36.43	6.63	32.03	-	14.42	-	-	16.76
CV0403	22	0	7	4	1-403-367	06-HL Tan	Pedernales	C	N	none	F	T	F	T	F	T,Ind,Ind,B,N/A	BC	C	68.14	27.84	9.89	50	27.56	17.17	16.48	8.04	16.5
CV0403	22	1	7	4	1-403-358	Indet Lt Brown	Castroville	pt Bl & St	Im	none	P	T	F	T	F	T,Ind,N,B,Sq	BC	Bc	40.2	39.5	6.52	25.85	-	12.19	-	5.44	17.59
CV0481	22	1	2	21	1-481-109	Indet Lt Brown	Nolan	pt Bl & St	Im	none	Ind	F	F	T	F	Unk,Ind,Ind,Ind,Ind	BC	Ind	45.38	27.21	7.61	28.9	-	17.8	16.46	6.23	17.13
CV0481	22	0	2	40	1-481-023	06-HL Tan	Marshall	P	P	none	R	T	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	63.7	40.53	7.57	50.69	40.45	14.02	22.46	7.14	[illegible]
CV0481	22	3	0	4	1-481-040	09-HL Tr Brown	Montell	C	N	Bl & brb	R	F	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	50.96	33.19	7.16	38.25	27.25	13.23	27.68	[illegible]	[illegible]
CV0481	22	2	0	7	1-481-059	Indet Lt Brown	Other Arrow	M	Es	none	F	T	T	F	F	T,Ind,Ind,Ind,Ind	BC	Ind	16.42	15.9	3.15	12.88	14.36	-	-	-	5.51
CV0481	22	1	2	33	1-481-132	Indet Misc.	Other Dart	pt Bl & St	Ind	Ind	Ind	F	F	F	F	Unk,Ind,Ind,Ind,Ind	Ind	Ind	39.09	30.93	9.42	-	-	-	-	-	-
CV0481	22	4	3	1	1-481-145	Indet Lt Brown	Other Dart	D	P	none	P	T	F	F	F	T,Ind,Ind,Ind,Ind	BC	Ind	48.39	39.79	5.58	48.39	39.79	-	-	-	-
CV0481	22	4	3	1	1-481-144	Indet Lt Brown	Other Arrow	M	Ind	none	P	T	F	F	F	T,Ind,Cv,Ind,N/A	BC	C	23.22	14.82	4.39	23.22	14.82	-	-	-	-
CV0495	22	6	0	6	1-495-024	09-HL Tr Brown	Marcos	C	N	Blade	R	F	F	T	F	T,Ind,Ind,Ind,Ind	BC	C	55.47	39.91	6.41	43.86	33.24	11.65	27.47	4.5	18.98
CV0587	17	1	0	5	1-587-052	Indet White	Other Arrow	D	P	none	P	F	F	F	F	Unk,Ind,Ind,B,Ind	PC	C	31.21	9.55	3.29	-	-	-	-	-	-
CV0587	17	1	0	6	1-587-063	Indet Dk Gray	Scallorn	Bl & St	Im	none	P	T	T	T	F	T,Ind,Ind,B,Ind	BC	C	21.36	13.08	3.24	16.3	13.08	3.67	8.06	8.57	6.57
CV0587	17	1	0	7	1-587-090	Indet Lt Gray	Other Dart	M	Es	none	Ind	F	F	F	F	Unk,Ind,Ind,B,Ind	BC	C	15.47	11.61	5.07	-	-	-	-	-	-
CV0587	17	0	2	0	1-587-033	Indet Black	Frio	pt Bl & St	Im	none	P	T	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	37.2	24.33	7.46	24.76	24.33	8.79	17.99	5.71	15.08
CV0587	17	1	0	6	1-587-062	Indet Mottled	Bulbar Stemmed	Bl & St	Ind	none	P	T	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	21.34	15.15	4.38	14.86	15.15	7.29	7.58	3.25	5.68
CV0587	17	1	0	6	1-587-064	06-HL Tan	Other Dart	C	N	none	P	F	F	F	F	T,Ind,Ind,Ind,Ind	PC	Ind	43.51	21.3	4.32	36.02	20.98	6.56	16.12	3.18	-
CV0587	17	1	0	6	1-587-065	Indet Lt Brown	Scallorn	pt Bl & St	Im	none	P	F	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	17.12	13.19	2.43	11.12	13.19	11.95	9.85	1.95	7.05
CV0587	17	1	0	6	1-587-071	Indet Dk Gray	Catan	C	Ind	none	R	F	F	F	F	T,Ind,Ind,Ind,Ind	PC	Ind	28.37	17.48	6.09	-	-	-	-	-	-
CV0587	17	1	0	7	1-587-088	06-HL Tan	Scallorn	C	N	none	P	T	T	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	28.76	17.58	3.35	23.22	15.07	4.4	11.2	2.55	7.63
CV0587	17	1	0	8	1-587-100	Indet Dk Brown	Edgewood	Bl & St	O	none	P	T	T	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	26.04	21.55	5.07	18.95	21.55	7.69	17.8	4.1	12.49
CV0587	17	1	0	8	1-587-101	06-HL Tan	Other Dart	Bl & St	Im	none	P	T	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	39.51	26.45	5.24	26.84	26.45	9.58	18.62	4.59	16.81
CV0587	17	1	0	9	1-587-118	Indet Trans	Dart	Bl & St	Im	none	P	T	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	28.4	18.23	6.48	16.42	18.12	9.98	15.14	5.26	14.31
CV0587	17	1	0	8	1-587-120	Indet Dk Brown	Other Dart	M	Em	none	P	F	F	F	F	Unk,Ind,Ind,Ind,Ind	BC	Ind	21.29	7.98	3.56	-	-	-	-	-	-
CV0587	17	3	2	2	1-587-153	06-HL Tan	Ensor	Bl & St	Ind	none	P	T	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	65.25	23.67	6.24	53.16	23.43	8.72	22.49	3.99	13.48
CV0587	17	4	0	11	1-587-189	Indet Dk Brown	Ensor	pt Bl & St	Ind	none	P	T	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	36.83	17.93	5.98	28.96	17.93	8.36	17.67	4.25	11.06
CV0587	17	1	0	6	1-587-218	08-FH Yellow	Scallorn	Bl & St	Im	none	P	T	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	19.91	17.29	3.58	12.59	17.32	7.92	9.99	3.1	6.34
CV0587	17	1	0	8	1-587-102	Indet Lt Brown	Scallorn	Bl & St	Im	none	P	T	T	T	F	T,Ind,Ind,Sl,Ind	SC	Ind	28.35	17.74	4.38	21.53	17.74	6.05	7.16	3.56	6.72
CV0587	17	3	2	2	1-587-154	06-HL Tan	Ensor	Bl & St	Ind	none	P	T	F	T	F	T,Ind,Ind,Ab,Ind	BC	Ind	42.5	21.1	6.44	33.05	20.83	7.14	20.71	4.8	13.79

Site	Proj.	TP	BT	Lvl	Curate No.	Lithic Material	Proj. Pt Type	Frag. Type	Brk.	Fort. Rework	Flak.	Sym.	Ser.	BT	BG	Shape (Bl, St, Bs, Sh, T)	X-sect.	Not.	L	W	T	BL	BW	SL	SW	ST	NW
CV0587	17	1	0	5	1-587-048	Indet Lt Brown	Young	P	P	none	P	F	F	F	F	T,Ind,Ind,B,R	PC	Ind	27.9	20.95	5.18	-	-	-	-	-	-
CV0587	17	1	0	6	1-587-061	Indet Lt Brown	Scallorn	C	Ind	none	P	T	F	T	F	T,Ind,Ind,Ind,Sq	BC	Ind	19.68	13.06	3.1	15.61	13.06	4.38	7.49	2.34	6.02
CV0594	15	0	0	0	1-594-079	Indet Lt Gray	Martindale	pt Bl & St	Im	Ind	R	F	T	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	-	24.3	-	33.87	19.53	9.67	22.06	-	15.29
CV0595	17	2	0	7	1-595-035	Indet Lt Brown	Other Dart	Bl only	Im	none	R	T	F	F	F	T,Ind,Ind,Ind,Ind	BC	Ind	58.21	47.09	5.77	58.21	47.09	-	-	-	-
CV0595	17	3	0	3	1-595-044	Indet Lt Gray	Scallorn	Bl & St	Im	none	P	T	T	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	23.4	11.02	3.62	17.13	11.02	6	8.62	2.7	5.39
CV0595	17	3	0	3	1-595-045	09-HL Tr Brown	Castroville	Bl & St	Im	none	R	F	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	39.02	32.2	5.42	26.9	26.9	12.66	20.52	4.22	19.88
CV0595	17	3	0	5	1-595-056	06-HL Tan	Montell	St	P	none	Ind	F	F	T	F	Unk,Ind,Ind,Ind,Ind	BC	Ind	10.68	23.98	4.07	-	-	10.68	23.98	4.07	
CV0595	17	4	0	1	1-595-064	06-HL Tan	Other Dart	Bl & St	P	none	R	T	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	34.69	34.07	7.45	20.19	34.11	14.57	24.91	5.86	24.15
CV0595	17	0	0	0	1-595-101	15-Gry/Brn/Grn	Pedernales	Bl & St	Im	none	R	F	F	T	F	Unk,Ind,Ind,Ind,Ind	BC	Ind	26.34	25.44	5.82	13.58	25.44	9.99	15.41	4.56	15.02
CV0595	17	0	0	0	1-595-102	06-HL Tan	Other Dart	Bl & St	Im	none	P	T	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	38.69	28.27	8.09	25.93	25.12	12.2	23.9	6.28	18.64
CV0905	22	5	0	2	1-905-029	Indet Lt Brown	Bulbar Stemmed	C	N	Blade	R	F	F	F	F	T,Ind,Ind,Ind,Ind	PC	Ind	27.26	14.29	2.89	21.85	12.63	5.93	3.8	2.17	4.14
CV0905	22	5	0	3	1-905-036	06-HL Tan	Dart	P	Im	none	R	T	F	T	F	Ov,Ind,Ind,Ind,Ind	BC	Ind	40.03	19.72	8.46	25.82	19.72	15.29	16.72	5.67	18.12
CV0905	22	5	0	10	1-905-088	Indet Lt Gray	Other Dart	C	Ind	none	P	F	F	F	F	T,Ind,Ind,Ind,Ind	BC	Ind	56.67	36.48	6.64	39.78	36.6	19	18.57	6.54	18.57
CV0935	22	2	0	1	1-935-024	Indet Lt Brown	Other Dart	D	Es	none	R	T	F	F	F	T,Ind,Ind,B,Ind	BC	C	22.62	18.1	4.93	22.62	18.1	-	-	-	-
CV0935	22	2	0	1	1-935-025	Indet Dk Gray	Other Arrow	P	Em	none	Ind	T	F	T	F	Unk,Ind,Ind,B,Ind	BC	C	18.31	21.08	3.66	-	-	9.18	16.92	3.2	5.19
CV0935	22	1	0	1	1-935-014	06-HL Tan	Scallorn	P	Im	none	P	F	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	25.67	19.81	4.72	15.41	15.84	7.53	9.58	2.85	6.84
CV0935	22	2	0	1	1-935-026	Indet Misc.	Bonham	C	N	none	P	F	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	28.91	17.32	3.49	22.47	12.49	6.07	4.64	1.65	4.73
CV0935	22	2	0	1	1-935-028	Indet Mottled	Young	P	Ind	none	R	T	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	22.45	25.19	5.06	-	-	22.45	25.19	5.06	-
CV0935	22	2	0	2	1-935-041	Indet Misc.	Scallorn	C	N	Blade	R	F	T	T	F	T,Ind,Ind,Ind,Ind	PC	Ind	22.37	12.76	3.06	16.1	10.08	6.63	10.4	2.14	7.14
CV0935	22	2	0	2	1-935-047	Indet Dk Gray	Other Dart	pt Bl & St	Bm	none	Ind	F	F	T	F	Unk,Ind,Ind,Ind,Ind	PC	Ind	36.61	21.87	6.09	28.23	20.96	7.01	13.65	4.58	-
CV0935	22	2	0	2	1-935-048	17-Owl Crk Black	Scallorn	C	N	none	R	T	T	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	30.62	13.21	4.57	24.37	13.09	4.81	9.67	2.87	6.2
CV0936	22	1	0	2	1-936-011	Indet Dk Brown	Other Dart	M	P	none	R	F	F	F	F	Unk,Ind,Ind,Ind,Ind	BC	C	16.19	27.85	8.14	16.19	27.85	-	-	-	-
CV0936	22	1	0	2	1-936-012	Indet Lt Brown	Other Arrow	D	Es	none	F	T	F	F	F	T,Ind,Ind,Ind,Ind	BC	Ind	17.1	13.03	2.58	17.1	13.03	-	-	-	-
CV0936	22	2	0	2	1-936-021	Indet Dk Gray	Other Arrow	D	Ind	none	P	T	T	F	F	T,Ind,Ind,Ind,Ind	BC	Ind	13.96	12.96	2.65	13.98	12.96	-	-	-	-
CV0936	22	2	0	2	1-936-022	Indet Black	Other Arrow	pt Bl & St	Bm	none	F	F	F	F	F	Unk,Ind,Ind,B,P	BC	Ind	14.87	13.87	3.61	-	-	14.87	13.87	3.61	
CV0960	17	1	0	7	1-960-052	Indet Misc.	Other Dart	M	P	Ind	Ind	F	F	F	F	Unk,Ind,Ind,Ind,Ind	Ind	Ind	22.78	30.75	6.17	-	-	-	-	-	-
CV0960	17	2	0	2	1-960-070	09-HL Tr Brown	Other Dart	M	Es	none	Ind	F	F	F	F	Unk,Ind,Ind,Ind,Ind	Ind		13.76	19.21	5.8	-	-	-	-	-	-
CV0960	17	2	0	2	1-960-072	08-FH Yellow	Ellis	C	Ind	none	P	T	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	42.8	27.08	5.38	29.05	27.08	11.94	20.2	4.71	15.41
CV0960	17	2	0	3	1-960-087	06-HL Tan	Edgewood	C	N	Blade	P	T	T	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	39.35	27.4	4.9	26.87	27.39	9.51	23.24	4.22	19.94
CV0960	17	2	0	3	1-960-088	06-HL Tan	Godley	C	N	none	R	F	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	48.65	29.56	7.14	34.8	29.56	13.04	21.5	5.87	18.05
CV0960	17	2	0	3	1-960-089	15-Gry/Brn/Grn	Castroville	Bl & St	O	none	P	F	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	43.45	30.99	7.55	33.09	30.51	9.85	19.4	5.41	16.51
CV0960	17	4	0	6	1-960-194	Indet White	Other Dart	St	Im	none	Ind	F	F	T	F	Unk,Ind,Ind,Ind,Ind	PC	Ind	15.54	18.95	5.02	-	-	15.54	18.95	5.02	-
CV0960	17	4	0	6	1-960-195	06-HL Tan	Other Dart	St	P	none	R	F	F	T	F	Unk,Ind,Ind,Ind,Ind	BC	Ind	7.62	16.15	3.9	-	-	7.62	16.15	3.9	-
CV0960	17	0	1	7	1-960-241	Indet Lt Gray	Castroville	Bl & St	Ind	none	P	T	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	105.97	43.04	9.94	99.25	41.41	6.61	28.73	5.55	29.33
CV0960	17	0	1	0	1-960-290	17-Owl Crk Black	Pedernales	Bl & St	Im	none	R	F	F	T	F	Unk,Ind,Ind,Ind,Ind	BC	Ind	32.43	26.94	7.63	15.15	22.4	17.36	17.14	5.64	17
CV1007	17	1	0	2	1-1007-069	17-Owl Crk Black	Edgewood	Bl & St	Ind	none	P	T	F	T	F	T,Ind,Ind,Ab,Ind	BC	C	18.05	18.91	4.72	11.37	19.06	5	15.1	3.88	12.24
CV1007	17	1	0	2	1-1007-070	Indet Lt Brown	Sabinal	Bl & St	Ind	none	P	T	F	T	F	T,Ind,Ind,B,Ind	BC	C	22.87	18.23	2.95	16.15	13.85	6.77	4.17	2.24	4.23
CV1007	17	1	0	2	1-1007-072	06-HL Tan	Castroville	pt Bl & St	P	none	Ind	F	F	T	F	Unk,Ind,Ind,B,Ind	BC	C	21.67	30.39	6.95	11.92	30.4	7.98	21.35	6.01	19.93
CV1007	17	1	0	3	1-1007-078	Indet Lt Gray	Other Arrow	D	P	none	R	F	F	F	F	T,Ind,Ind,B,Ind	PC	C	12.8	16.87	2.84	-	-	-	-	-	-
CV1007	17	2	0	7	1-1007-119	Indet White	Other Dart	St	Im	none	R	T	F	T	F	Unk,Ind,Ind,B,Ind	BC	C	18.38	23.54	5.89	-	-	18.38	23.54	5.89	17.3
CV1007	17	1	0	4	1-1007-281	Indet Lt Brown	Young	P	Es	none	R	F	F	F	F	Unk,Ind,Ind,B,Ind	PC	C	26.96	22.92	4.54	-	-	-	-	-	-
CV1007	17	1	0	2	1-1007-071	08-FH Yellow	Other Arrow	Bl only	Ind	none	P	T	F	F	F	T,Ind,Ind,Ind,Ind	BC	Ind	30.98	21.7	4.08	26.09	21.16	-	-	-	-

Site	Proj.	TP	BT	Lvl	Curate No.	Lithic Material	Proj. Pt Type	Frag. Type	Brk.	Port. Rework	Flak.	Sym.	Ser.	BT	BG	Shape (Bl, St, Bs, Sh, T)	X-sect.	Not.	L	W	T	BL	BW	SL	SW	ST	NW
CV1007	17	1	0	5	1-1007-064	Indet White	Young	P	Ind	none	P	F	F	F	F	T,Ind,Ind,Ind,Ind	PC	Ind	23.82	18.48	3.85	-	-	-	-	-	-
CV1007	17	1	0	6	1-1007-090	17-Owl Crk Black	Large	Bl & St	Im	none	P	T	T	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	32.71	31.77	5.35	19.71	30.58	11.53	17.92	3.83	14.61
CV1007	17	1	0	7	1-1007-096	06-HL Tan	Other Dart	Bl only	Ind	none	P	T	F	F	F	T,Ind,Ind,Ind,Ind	BC	Ind	73.89	29.78	7.55	73.89	29.78	-	-	-	-
CV1007	17	1	0	8	1-1007-103	Indet Misc.	Scallorn	Bl & St	Ind	none	P	T	T	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	27.51	14.64	3.36	21.69	14.64	4.66	11.21	2.28	7.53
CV1007	17	1	0	12	1-1007-113	Indet Dk Br	Montell	Bl & St	P	none	P	T	F	T	F	T,Ind,InJ,Ind,Ind	BC	Ind	54.08	31.34	6.24	38.14	31.34	13.28	22.22	4.39	18.63
CV1007	17	1	0	12	1-1007-114	06-HL Tan	Castroville	Bl & St	Ind	none	P	T	F	T	F	T,Ind,Ind,Ind,Ind	BC		73.22	35.08	7.53	61.51	35.08	10.36	21.11	4.54	19.01
CV1007	17	1	0	0	1-1007-124	Indet Lt Gray	Scallorn	Bl & St	P	none	R	F	F	T	F	Unk,Ind,Ind,Ind,Ind	BC	Ind	15.59	16.14	3.76	9.58	16.14	6.44	10	2.36	7.32
CV1007	17	0	0	0	1-1007-137	Indet Lt Gray	Ensor	Bl & St	P	none	P	T	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	27.17	24.61	5.33	20.87	23.25	6.1	24.61	4.16	19.77
CV1007	17	0	0	0	1-1007-138	15-Gry/Brn/Grn	Pedernales	C	N	none	R	T	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	66.94	25.46	8.36	47.05	24.81	15.93	18.07	6.34	18.73
CV1007	17	3	0	8	1-1007-162	Indet Lt Brown	Other Arrow	Bl only	Im	none	P	T	T	F	F	T,Ind,Ind,Ind,Ind	BC	Ind	29.78	20.49	3.31	26.85	20.49	-	-	-	6.29
CV1008	17	3	0	1	1-1008-061	Indet Dk Gray	Cameron	P	O	none	R	T	F	T	F	T,Ind,Ind,B,Ind	BC	C	14.63	17.38	2.68	-	-	-	-	-	-
CV1008	17	2	0	1	1-1008-068	Indet Misc.	Bonham	pt Bl & St	Ind	none	P	F	F	T	F	T,Ind,Ind,B,Ind	BC	C	21.54	14.56	3.16	14.61	11.92	6.71	4.89	2.04	4.39
CV1008	17	3	0	2	1-1008-072	Indet Lt Brown	Scallorn	LongSeg	Ind	none	P	F	F	T	F	Unk,Ind,Ind,B,Ind	BC	C	18.15	15.22	3.43	-	-	-	-	-	7.16
CV1008	17	3	0	2	1-1008-046	Indet Misc.	Bonham	D	Ind	none	P	T	F	F	F	T,Ind,Ind,Ind,Ind	BC	Ind	27.04	15.51	3.55	20.15	15.51	-	-	-	5.42
CV1008	17	3	0	2	1-1008-051	Indet Dk Gray	Other Dart	C	N	none	P	F	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	36.18	17.11	4.99	27.23	17.13	8.39	12.18	4	12.38
CV1008	17	3	0	0	1-1008-063	06-HL Tan	Scallorn	C	N	Blade	P	T	F	T	F	T,Ind,Ind,Ind,Ind	PC	Ind	19.1	12.62	2.27	14.93	12.69	3.81	10.19	1.59	6.73
CV1008	17	2	0	1	1-1008-067	Indet Misc.	Bonham	P	Ind	none	P	T	F	T	F	T,Ind,Ind,Ind,Ind	PC	Ind	25.16	19.35	3.13	17.96	15.21	5.92	6.16	2.35	4.89
CV1008	17	3	0	2	1-1008-073	17-Owl Crk Black	Scallorn	St	Ind	Ind	Ind	F	F	T	F	Unk,Ind,Ind,Ind,Ind	BC	Ind	9.88	11.38	3.55	-	-	9.86	11.38	3.55	6.78
CV1011	17	1	0	1	1-1011-034	13-ER Flecked	Scallorn	Bl & St	Ind	none	P	T	F	T	F	T,Ind,Ind,B,Ind	BC	C	22.83	14.72	4.83	15.87	15.1	6.95	13.13	4.26	5.92
CV1011	17	2	0	1	1-1011-056	08-FH Yellow	Pedernales	St	P	none	R	F	F	T	F	Unk,Ind,Ind,B,Ind	BC	C	13.04	15.82	4.68	-	-	13.04	15.82	4.68	-
CV1011	17	3	0	8	1-1011-084	Indet Lt Gray	Other Arrow	D	Ind	none	P	F	F	F	F	T,Ind,Ind,B,Ind	PC	C	31.03	17.78	3.53	-	-	-	-	-	-
CV1011	17	0	0	0	1-1011-009	Indet Mottled	Scallorn	Bl & St	Ind	none	P	T	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	25.48	15.85	3.99	16.53	15.8	7.27	8.52	3.64	7.25
CV1011	17	1	0	1	1-1011-010	08-FH Yellow	Fairland	Bl & St	Im	none	P	F	S	T	F	Unk,Ind,Ind,Ind,Ind	BC	Ind	25.76	22.39	5.45	16.82	22.05	10.16	17.91	4.24	14.1
CV1011	17	1	0	1	1-1011-011	Indet Lt Gray	Clifton	Bl & St	P	none	R	F	F	T	F	Unk,Ind,Ind,Ind,Ind	BC	Ind	18.86	27.2	4.88	13.6	27.19	7.27	14.72	3.49	14.57
CV1011	17	1	0	2	1-1011-024	Indet Dk Brown	Other Arrow	D	P	none	P	F	F	F	F	T,Ind,Ind,Ind,Ind	PC	Ind	20.27	14.2	1.92	-	-	-	-	-	-
CV1011	17	1	0	1	1-1011-033	Indet Dk Brown	Scallorn	Bl & St	Im	none	P	T	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	15.07	15.16	2.65	10.05	13.17	3.25	7.61	2.26	6.96
CV1011	17	1	0	1	1-1011-035	Indet Dk Gray	Other Dart	St	Ind	none	Ind	F	F	T	F	Unk,Ind,Ind,Ind,Ind	BC	Ind	18.67	16.95	5.79	-	-	18.67	15.55	5.79	-
CV1011	17	1	0	1	1-1011-036	Indet Dk Brown	Other Dart	Bl only	Ind	none	P	F	F	F	F	Unk,Ind,Ind,Ind,Ind	BC	Ind	20.25	23.46	7.22	14.17	22.32	-	-	-	-
CV1011	17	1	0	2	1-1011-043	Indet Lt Brown	Edgewood	Bl & St	Im	none	P	F	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	45.93	26.98	6.22	37.52	26.04	9.89	19.21	5.14	15.5
CV1011	17	1	0	3	1-1011-044	Indet Dk Brown	Scallorn	pt Bl & St	O	none	P	F	F	T	F	Unk,Ind,Ind,Ind,Ind	BC	Ind	13.67	11.74	3.06	7.62	9.1	5.41	9.61	2.24	-
CV1011	17	2	0	1	1-1011-065	Indet Mottled	Dart	Bl & St	Im	none	P	F	F	T	F	Unk,Ind,Ind,Ind,Ind	BC	Ind	22.87	15.62	7.35	12.24	15.01	12.51	14.43	7.07	-
CV1011	17	2	0	2	1-1011-071	Indet Dk Gray	Other Dart	St	Ind	none	P	F	F	T	F	Unk,Ind,Ind,Ind,Ind	BC	Ind	10.71	16.65	6.16	-	-	10.71	16.65	6.16	-
CV1011	17	3	0	8	1-1011-083	Indet Dk Brown	Scallorn	pt Bl & St	Im	none	P	T	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	16.32	14.24	3.59	9.92	14.4	5.43	8.67	2.84	5.4
CV1011	17	3	0	8	1-1011-085	Indet Dk Gray	Perdiz	C	Ind	none	P	T	F	T	F	T,Ind,Ind,Ind,Ind	PC	Ind	22.92	16.38	2.8	17.22	16.36	5.6	5.04	1.93	5.76
CV1011	17	3	0	10	1-1011-116	Indet Misc.	Dart	St	Ind	Ind	Ind	F	F	F	F	Unk,Ind,Ind,Ind,Ind	Ind	Ind	-	-	-	-	-	-	-	-	-
CV1011	17	3	0	11	1-1011-125	Indet Lt Brown	Scallorn	Bl & St	Ind	none	P	T	F	T	F	T,Ind,Ind,Ind,Ind	BC	Ind	21.51	9.83	3.28	15.19	9.29	7.11	9.83	2.66	6.19
CV1023	17	5	0	1	1-1023-031	14-FH Gray	Marshall	Bl & St	P	none	P	T	F	T	F	T,NoneInd,B,Ind	BC	C	33.84	35.02	5.78	24.77	35.28	9.49	15.05	4.42	13.43
CV1023	17	0	0	0	1-1023-015	06-HL Tan	Other Dart	pt Bl & St	Ind	none	P	F	F	T	F	Ind,Ind,Ind,Ind	BC	Ind	40.14	31.26	6.97	31.85	31.13	8.37	15.01	6.32	14.7
CV1023	17	5	0	1	1-1023-017	Indet Lt Brown	Scallorn	pt Bl & St	Es	none	P	T	F	T	F	T,NoneSt,N/A,N/A	BC	C	22.9	17.31	3.95	15.31	15.3	5.68	9.7	3.52	7.15
CV1023	17	5	0	1	1-1023-032	Indet Dk Brown	Scallorn	St	Ind	none	P	F	F	T	F	T,N/A,St,N/A,N/A	BC	N/A	15.36	16	3.43	-	-	5.96	9.6	3.16	5.6
CV1023	17	5	0	2	1-1023-019	Indet White	Other Dart	M	Es	none	P	F	F	F	F	Unk,NoneCc,N/A,P	BC	C	23.19	26.01	5.62	-	-	-	-	-	-
CV1027	17	4	0	0	1-1027-022	Indet White	Other Arrow	Bl & St	Ind	none	P	T	F	T	F	T,N/A,N/A,B,Ind	BC	C	16	12.68	3.23	11.08	12.63	4.84	7.09	2.96	5.48

Site	Proj.	TP	BT	Lvl	Curate No.	Lithic Material	Proj. Pt Type	Frag. Type	Brk.	Port. Rework	Flak.	Sym.	Ser.	BT	BG	Shape (Bl, St, Bs, Sh, T)	X-sect.	Not.	L	W	T	BL	BW	SL	SW	ST	NW
CV1027	17	3	0	2	1-1027-017	Indet White	Other Dart	pt Bl & St	Es	none	P	T	F	T	F	Unk,N/A,Cv,N/A,N/A	BC	C	51.73	38.05	10.59	51.73	38.05	-	-	-	-
CV1027	17	6	0	3	1-1027-033	06-HL Tan	Other Dart	Bl only	Ind	none	P	F	F	F	F	Unk,N/A,Str,none,N/A	BC	C	46.31	38.16	6.3	46.31	38.16	-	-	-	-
CV1027	17	0	0	0	1-1027-030	Indet Lt Brown	Yarbrough	Bl & St	im	none	P	T	F	T	F	T,N/A,N/A,N/A,N/A	BC	Ind	44.1	19.11	7.24	31.13	19.11	11.5	15.49	5.73	14.23
CV1027	17	1	1	4	1-1027-056	Indet White	Yarbrough	C	N	Blade	P	T	F	T	T	T,N/A,Cc,N/A,Sq	PC	C	59	26	7	45	26	14	18	6	17
CV1033	22	4	0	3	1-1033-027	Indet Lt Gray	Fairland	P	Ind	none	P	T	F	T	F	T,N/A,Cv,N/A,R	BC	C	46.23	22.75	6.23	35.03	22.21	10.47	21.86	4.85	16.7
CV1038	17	0	2	0	1-1038-050	06-HL Tan	Lange	Bl & St	Ind	none	P	F	F	T	F	T,N/A,Cv,N/A,N/A	BC	C	34.02	22.66	6.4	23.39	22.63	9.55	17.97	6.3	16.34
CV1038	17	1	6	6	1-1038-057	Indet Dk Gray	Other Arrow	Bl only	Ind	none	P	T	F	F	F	T,ParallelCv,N/A,N/A	BC	C	27.09	20.66	3.1	19.78	17.53	-	-	-	-
CV1038	17	1	6	6	1-1038-058	06-HL Tan	Perdiz	Bl & St	Ind	none	P	T	F	T	F	T,Str,Cc,N/A,P	BC	C	27.97	20.82	3.6	17.97	19.59	8.54	5.61	3.14	6.06
CV1038	17	3	2	4	1-1038-127	Indet Dk Brown	Marcos	Bl & St	Ind	none	P	T	F	T	F	T,Str,Cc,Ind,Sq	BC	Ind	42.99	213.37	4.36	36.49	22.61	6.75	13.62	3.4	10.86
CV1080	22	2	0	3	1-1080-125	Indet Dk Gray	Scallorn	pt Bl & St	Im	Barbs	R	F	F	T	F	T,Str,Cv,B,N/A	PC	C	25.11	16.62	4.05	17.7	15.55	9.22	8.61	2.24	6.13
CV1080	22	2	0	3	1-1080-126	Indet Lt Brown	Scallorn	pt Bl & St	Ind	Bl & brb	R	F	F	T	F	Unk,Str,Cv,B,N/A	BC	C	25.55	15.78	4.34	17.84	15.71	8.29	8.38	2.89	5.8
CV1080	22	2	0	5	1-1080-056	08-FH Yellow	Other Arrow	D	Es	none	R	F	F	F	F	T,Str,Ind,B,N/A	BC	C	20	11.31	2.03	20	11.31	-	-	-	-
CV1080	22	2	0	5	1-1080-135	Indet Misc.	Fresno	C	N	none	R	F	F	T	F	T,Str,Ind,B,N/A	BC	C	22.77	14.96	3.43	-	-	-	-	-	-
CV1080	22	2	0	4	1-1080-030	Indet Misc.	Scallorn	C	N	Blade	P	F	F	T	F	T,Str,Cc,R,P	BC	C	17.37	13.93	2.94	13.22	9.92	3.7	13.93	2.85	6.64
CV1080	22	2	0	3	1-1080-050	06-HL Tan	Scallorn	pt Bl & St	Ind	Blade	R	F	F	T	F	Unk,Str,Cc,R,P	BC	C	28.23	11.74	3.55	12.94	12.22	7.32	11.71	2.93	6.14
CV1080	22	2	0	4	1-1080-028	Indet Dk Brown	Fresno	P	Ind	none	R	F	F	T	F	T,Str,Cc,Ab,R	BC	Side	20.47	19.46	3.61	-	-	-	-	-	-
CV1080	22	2	0	2	1-1080-029	Indet Lt Brown	Other Arrow	D	P	none	P	T	F	F	F	Unk,Str,Cc,N/A,R	PC	Ind	13.26	12.81	2.83	-	-	-	-	-	-
CV1085	17	1	0	6	1-1085-075	Indet Dk Brown	Travis	Bl & St	Es	none	P	F	F	T	F	T,Str,R,B,N/A	BC	C	49.61	28.24	7.92	33.52	28.24	15.38	17.18	6.37	19.69
CV1085	17	2	0	2	1-1085-014	08-FH Yellow	Other Arrow	Bl only	Es	none	P	T	T	F	F	T,Str,Cc,Ab,P	BC	C	22.09	16.62	3.51	22.09	16.62	-	-	-	-
CV1085	17	1	0	5	1-1085-049	Indet Lt Brown	Other Arrow	D	Ind	none	P	F	F	F	F	T,Str,Cc,Ab,R	BC	C	29.58	17.08	3.6	-	-	-	-	-	-
CV1085	17	1	0	4	1-1085-040	Indet Lt Brown	Perdiz	C	Es	none	P	T	T	T	F	T,Str,Cc,Ab,Sq	PC	C	27.78	15.23	2.77	18.58	14.14	9.56	5.55	2.47	5.55
CV1085	17	1	0	5	1-1085-052	Indet Misc.	Other Arrow	Bl only	Ind	none	P	T	T	F	F	T,Str,Str,Ab,Sq	BC	C	30.33	12.9	3.66	25.83	12.9	-	-	-	-
CV1085	17	1	0	5	1-1085-048	Indet Lt Gray	Other Arrow	D	Em	Ind	Ind	F	F	F	F	T,Str,Str,Sl,Sq	BC	C	28.1	15.45	3.28	-	-	-	-	-	-
CV1105	17	4	3	8	1-1105-154	15-Gry/Brn/Grn	Yarbrough	C	N	none	P	T	F	T	F	T,Str,Cc,Ab,Ind	BC	C	45.95	19.18	8.35	31.12	19.18	12.32	15.42	7.92	13.13
CV1105	17	3	0	11	1-1105-123	Indet Dk Brown	Bulverde	Bl & St	Im	none	R	T	F	T	F	T,Str,Cc,Ab,P	BC	C	52.84	28.7	7.86	33.13	28.7	16.49	14.81	6.25	17.67
CV1105	17	1	1	1	1-1105-172	Indet Lt Brown	Perdiz	St	Es	none	P	F	F	T	F	,Str,Cc,Ab,R	PC	C	18.04	21.98	2.54	-	-	11.43	6.79	2.31	6.79
CV1105	17	1	1	1	1-1105-274	06-HL Tan	Marshall	Bl & St	Ind	Blade	P	T	F	T	F	Ov,Str,Cc,B,R	BC	C	55.19	33.05	9	42.87	33.05	11.91	18.82	7.87	15.11
CV1129	22	1	2	11	1-1129-054	Indet White	Barber	P	P	none	R	T	F	T	F	Ov,Str,Cc,Ab,Ind	BC	C	33.33	30.25	6.69	23.03	27.65	11.22	24.35	4.67	-
CV1136	17	3	0	11	1-1136-101	Indet Dk Brown	Bulverde	Bl & St	Im	Blade	P	F	F	T	F	T,Str,Cc,Ind,Ind	BC	Ind	51.47	30.41	8.38	34.85	30.41	16.72	17.88	7.86	15.77
CV1136	17	5	0	11	1-1136-216	Indet Dk Brown	Castroville	St	P	none	P	F	F	T	F	Unk,Str,Cc,Ab,P	BC	C	18.06	28.53	6.71	-	-	11.05	20.16	6.1	16.62
CV1136	17	3	0	7	1-1136-066	Indet Dk Gray	Other Dart	C	N	Blade	AB	T	F	T	F	T,Str,Cc,Ab,R	B	C	34.14	18.54	6.69	24.66	18.14	8.36	19.54	5.59	16.65
CV1166	22	1	0	1	1-1166-047	Indet Misc.	Other Arrow	D	Ind	none	R	T	T	F	F	T,Str,Str,Ab,P	BC	C	13.66	9.86	2.05	13.66	9.86	-	-	-	-
CV1166	22	1	0	1	1-1166-014	08-FH Yellow	Edgewood	C	N	none	P	T	F	T	T	T,Str,Cc,B,P	BC	C	52	23.25	5.05	41.87	22.19	9.62	17.15	4.02	11.34
CV1166	22	1	0	1	1-1166-015	15-Gry/Brn/Grn	Other Arrow	D	Ind	none	R	T	T	F	F	T,Str,Cc,Ind,Sq	BC	C	17.39	10.59	2.55	17.39	10.59	-	-	-	-
CV1167	17	1	0	5	1-1167-170	06-HL Tan	Other Arrow	pt Bl & St	Ind	none	Ind	F	F	F	F	T,Str,Str,N/A,N/A	BC	C	18.72	16.03	3.8	-	-	-	-	-	-
CV1167	17	1	0	4	1-1167-104	Indet Lt Brown	Scallorn	C	N	none	P	T	F	F	F	T,Str,Cc,Ab,P	BC	C	23.21	14.8	3.89	19.46	14.77	4.13	7.06	2.69	4.43
CV1167	17	1	0	3	1-1167-065	Indet Lt Brown	Scallorn	Bl & St	Es	none	P	T	F	T	F	T,Str,Cc,B,P	BC	C	17.95	12.97	3.61	10.5	12.97	6.2	8.47	2.75	6.29
CV1167	17	1	0	4	1-1167-103	06-HL Tan	Other Dart	Bl & St	Ind	Stem	R	T	F	T	F	Unk,Str,Cc,B,P	BC	C	31.85	22.37	5.24	13.76	21.64	19.09	22.7	4.94	8.83
CV1167	17	1	0	4	1-1167-106	Indet Lt Brown	Scallorn	pt Bl & St	Ind	none	P	F	F	T	F	Unk,Str,NB,P	BC	B	25.44	17.77	2.96	19.76	15.58	6.96	11.55	2.42	8.95
CV1167	17	1	0	4	1-1167-105	Indet Lt Gray	Scallorn	Bl & St	Ind	none	P	T	F	T	F	T,Str,Cc,Ab,R	BC	C	24.26	10.15	3.49	18.63	10.15	5.52	8.98	2.92	5.21
CV1167	17	2	0	2	1-1167-127	Indet Lt Brown	Other Arrow	Bl only	Es	none	R	F	F	F	F	T,Str,Cc,Ab,R	BC	C	14.25	16.23	4.44	11.54	13.86	-	-	-	5.84
CV1167	17	1	0	4	1-1167-108	Indet Lt Brown	Scallorn	Bl & St	Im	none	P	T	T	T	F	T,Str,N,Ab,R	BC	B	17.97	13.84	3.31	12.7	12.87	5.85	8.39	2.33	5.71

Site	Proj.	TP	BT	Lvl	Curate No.	Lithic Material	Proj. Pt Type	Frag. Type	Brk.	Port. Rework	Flak.	Sym.	Ser.	BT	BG	Shape (Bl, St, Bs, Sh, T)	X-sect.	Nol.	L	W	T	BL	BW	SL	SW	ST	NW
CV1167	17	1	0	4	1-1167-107	Indet Misc.	Other Arrow	pt Bl & St	N	none	M	T	F	T	F	T,Str,Cc,Ind,R	PC	C	16.61	11.44	2.83	11.33	11.44	5.36	6.52	1.87	5.6
CV1167	17	1	0	4	1-1167-102	08-FH Yellow	Other Arrow	St	Ind	Ind	Ind	F	F	F	F	Unk,Str,Cv,Ab,Sq	Ind	C	24.9	8.5	3.55	-	-	-	-	-	-
CV1167	17	1	0	4	1-1167-187	Indet Lt Brown	Other Arrow	D	P	none	M	F	F	F	F	L,Str,Str,Ab,Sq	PC	C	21.88	14.09	2.44	-	-	-	-	-	-
CV1167	17	2	0	9	1-1167-149	03-AM Gray	Other Arrow	D	Ind	none	P	F	F	F	F	T,Str,Cc,B,Sq	BC	C	18.74	10.86	3.73	-	-	-	-	-	-
CV1195	16	1	0	1	1-1195-077	36-HL Tan	Other Dart	pt Bl & St	Ind	Ind	M	F	F	T	F	Unk,Str,Cv,Ab,N/A,	PC	C	-	25.02	-	-	-	13.09	24.9	-	20.73
CV1378	22	1	0	2	1-1378-015	17-Owl Crk Black	Scallorn	P	Ind	none	F	T	F	T	F	T,Str,Cc,Ind,Sq	BC	C	26.81	15.74	3.8	20.2	15.48	5.72	9.7	2.41	5.22
CV1391	17	2	0	5	1-1391-089	Indet Misc.	Other Arrow	C	N	none	P	F	F	T	F	T,Str,P,B,N/A	PC	B	23.28	18.3	4.25	18.91	17.77	4.17	4.58	2.47	5.45
CV1391	17	4	0	1	1-1391-085	Indet Lt Gray	Dart	C	N	Blade	AB	T	F	T	F	T,Str,Ind,B,Sq	B	Ind	45.37	16.11	7.1	32.9	15.8	12.29	14.25	5.5	11.55
CV1403	22	2	0	1	1-1403-017	03-AM Gray	Nolan	C	N	Bl & st	AB	T	F	T	F	T,Str,Str,Ab,Sq	B	C	35.69	21.23	7.56	22.68	21.15	14.26	15.95	6.18	15.99
CV1472	22	1	0	2	1-1472-006	06-FH Yellow	Other Dart		Ind	none	P	T	F	F	F	L,Str,Cc,Ind,Ind	BC	C	42.59	27.64	6.53	42.59	27.64	-	-	-	-
CV1472	22	1	0	3	1-1472-014	Indet Lt Gray	Bulverde	C	N	Blade	R	T	F	T	F	T,Str,Str,Ind,N/A	BC	C	62.81	35.15	10.09	46.91	34.96	15.02	15.92	6.56	17.01
CV1472	22	1	0	8	1-1472-036	14-FH Gray	Edgewood	P	O	none	P	T	F	T	T	Unk,N/A	BC		31.7	30.25	7.55	20.75	29.95	10.65	22.25	5.13	15.46
CV1472	22	1	0	6	1-1472-028	08-FH Yellow	Ellis	P	Ind	none	P	T	F	T	F	T,Str,Cv,Ab,R	BC	C	38.4	20.76	6.08	29.54	20.72	8.51	16.36	3.86	12.99
CV1472	22	1	0	6	1-1472-027	08-FH Yellow	Other Dart	pt Bl & St	Ind	none	P	F	F	T	F	Unk,Str,Str,Ab,Sq	BC	C	33.36	24.07	6.27	11.56	24.08	21.78	15.27	4.87	15.74

*specimen has been reattached to its Med section and has not had attributes recorded

** missing artifact

Note: all measurements in millimeters

APPENDIX E

Macrobotanical Remains

PLANT REMAINS FROM FLOTATION SAMPLES: TESTING AND SITE ASSESSMENT AT FORT HOOD, TEXAS

J. Philip Dering

This report presents results scans of 60 flotation samples collected from test excavations at archaeological sites located at Ft. Hood, Coryell and Bell counties, Texas. The samples were examined in order to determine the potential of these sites to produce useful botanical information.

METHODS

The 60 samples in this study were floated by personnel from TRC Mariah and Associates, Inc., and the light fractions were submitted to Texas A&M University for analysis. The flotation samples, together with proveniences and volumes, are presented in Table E-1.

Because the goal of the project was to assess the data potential of each site investigated, samples were scanned for carbonized wood, seeds, and other useful plant parts. Samples were not sorted and bagged separately. Estimated counts, however, were made for each component in the sample. In addition to carbonized plant parts, the presence of uncarbonized seeds and rodent pellets was noted in order to assess one aspect of the disturbance to the context of each sample.

Before scanning, the samples were passed through a series of four nested geological screens with mesh sizes ranging from 4 mm to 0.450 mm. Each size grade, including the pan, was examined for carbonized seeds, fruit fragments, and other useful plant parts using a binocular dissecting microscope at 8 magnifications. Scan time averaged 15 minutes-per-sample.

In most cases, wood was not identified, because material already had been separated from the samples for that purpose. The results of those identifications have been submitted in a separate report. Carbonized seeds were identified using reference collections at Texas A&M University.

RESULTS AND RECOMMENDATIONS

Table E-2 presents the results of the scans. Twenty-one of the 60 flotation samples (35%) yielded identifiable carbonized plant remains. Three of the samples contained carbonized seeds, and one sample contained a fragment of a carbonized bulb. Identifiable wood fragments were recovered from 17 samples. No identifiable carbonized plant parts were found in 39 (65%) of the samples.

Table E-3 presents the samples that yielded seeds or bulb fragments, as well as samples with identifiable charred wood remains. The archaeological sites from which these samples were taken exhibit a much higher potential for the recovery of plant subsistence data. Both the seed and bulb remains were recovered in very small quantities. The sites from which these samples were taken may produce more data if sampled in the future, but because of the small amount of seed/bulb material recovered, there is no guarantee that such would be the case. Likewise, those sites with features containing abundant wood charcoal remains may also yield more direct evidence of plant exploitation if they are sampled during future excavations.

The bulb fragment from 1-117-108 is particularly interesting given the growing body of evidence that the prehistoric inhabitants of central Texas often were processing large numbers of bulbs, including onion (*Allium* sp.) and wild hyacinth (*Camassia scilloides*). For example, at Horn Shelter over 60 charred bulbs were recovered from a late Prehistoric hearth. The rock shelters and overhangs located on Fort Hood should be considered to have the potential of producing a similar find. The goosefoot seed from 1-481-212 is a small, wild type, around 1 mm in diameter.

Table E-1 Flotation Sample Proveniences.

Site	Catalog No.	Fea. No.	Site	Catalog No.	Fea. No.
CV0044	1-44-109	1	CV0389	1-389-229	1
CV0044	1-44-118	1	CV0389	1-389-235	2
CV0046	1-46-199	1	CV0389	1-389-241	1
CV0046	1-46-201	1	CV0389	1-389-258	4
CV0047	1-47-185	1	CV0389	1-389-264	5
CV0047	1-47-186	1	CV0403	1-403-487	1
CV0088	1-88-241	2	CV0403	1-403-491	2
CV0088	1-88-243	1	CV0403	1-403-493	1
CV0098	1-98-056	6	CV0481	1-481-211	1
CV0098	1-98-057	5	CV0481	1-481-212	2
CV0098	1-98-059	7	CV0481	1-481-216	5
CV0098	1-98-060	4	CV0481	1-481-219	1
CV0099	1-99-121	3	CV0481	1-481-221	6
CV0099	1-99-123	2	CV0481	1-481-222	1
CV0099	1-99-126	3	CV0481	1-481-223	4
CV0099	1-99-130	2	CV0481	1-481-228	5
CV0115	1-115-229	2	CV0481	1-481-230	2
CV0117	1-117-104	1	CV0905	1-905-132	
CV0117	1-117-105	1	CV0918	1-918-026	1
CV0117	1-117-108	1	CV0935	1-935-059	
CV0117	1-117-109	1	CV0936	1-936-043	1
CV0117	1-117-111	1	CV1080	1-1080-079	
CV0184	1-184-169	3	CV1129	1-1129-182	4
CV0184	1-184-174	3	CV1129	1-1129-183	3
CV0184	1-184-195	2	CV1166	1-1166-031	1
CV0184	1-184-200	1	CV1378	1-1378-017	1
CV0317	1-317-350	2	CV1378	1-1378-021	1
CV0379	1-379-135	1	CV1403	1-1403-009	1
CV0380	1-380-051	1	CV1403	1-1403-011	2
CV0389	1-389-229	1	CV1403	1-1403-049	1
CV0389	1-389-235		CV1471	1-1471-078	1

Table E-2 Results of the Flotation Scans.

Catalog No.	Identification	Part	Count[1]
1-1080-079	No Identifiable Carbonized Plant Remains	Not Applicable	
1-1129-182	No Systematic Identification Attempted	Wood, 3 mm+	<25
1-1129-183	No Systematic Identification Attempted	Wood, 3 mm+	<25
1-1129-183	No Systematic Identification Attempted	Wood, <3 mm	<25
1-115-229	No Systematic Identification Attempted	Wood, <3 mm	<25
1-1166-031	No Identifiable Carbonized Plant Remains	Not Applicable	
1-1166-031	No Systematic Identification Attempted	Rodent Pellets	<5
1-117-104	No Identifiable Carbonized Plant Remains	Not Applicable	
1-117-105	No Identifiable Carbonized Plant Remains	Not Applicable	
1-117-108	Lily Family	Bulb	1
1-117-109	No Identifiable Carbonized Plant Remains	Not Applicable	
1-117-111	No Identifiable Carbonized Plant Remains	Not Applicable	
1-1378-017	No Identifiable Carbonized Plant Remains	Not Applicable	
1-1378-021	No Identifiable Carbonized Plant Remains	Not Applicable	
1-1403-009	No Identifiable Carbonized Plant Remains	Not Applicable	
1-1403-011	No Identifiable Carbonized Plant Remains	Not Applicable	
1-1403-049	No Identifiable Carbonized Plant Remains	Not Applicable	
1-1471-078	No Identifiable Carbonized Plant Remains	Not Applicable	
1-184-169	No Identifiable Carbonized Plant Remains	Not Applicable	
1-184-174	No Identifiable Carbonized Plant Remains	Not Applicable	
1-184-195	No Identifiable Carbonized Plant Remains	Not Applicable	
1-184-200	No Identifiable Carbonized Plant Remains	Not Applicable	
1-317-350	No Systematic Identification Attempted	Wood, 3 mm+	25-50
1-379-135	Unknown Seed, <0.8 mm, spherical	Seeds, Carbonized	<5
1-380-051	No Identifiable Carbonized Plant Remains	Not Applicable	
1-389-229	No Identifiable Carbonized Plant Remains	Not Applicable	
1-389-235	No Identifiable Carbonized Plant Remains	Not Applicable	
1-389-241	No Identifiable Carbonized Plant Remains	Not Applicable	
1-389-258	No Identifiable Carbonized Plant Remains	Not Applicable	
1-389-264	No Identifiable Carbonized Plant Remains	Not Applicable	
1-403-487	No Identifiable Carbonized Plant Remains	Not Applicable	
1-403-491	No Identifiable Carbonized Plant Remains	Not Applicable	
1-403-493	No Identifiable Carbonized Plant Remains	Not Applicable	
1-44-109	No Systematic Identification Attempted	Wood, <3 mm	<5
1-44-118	No Systematic Identification Attempted	Wood, <3 mm	<25
1-44-118	Leguminous Wood Type	Seeds, Carbonized	1
1-46-199	No Systematic Identification Attempted	Seed, Uncarbonized	<25
1-46-201	No Identifiable Carbonized Plant Remains	Not Applicable	
1-47-185	No Systematic Identification Attempted	Rodent Pellets	<50

Table E-2 (Concluded).

Catalog No.	Identification	Part	Count[1]
1-47-185	No Systematic Identification Attempted	Seed, Uncarbonized	<50
1-47-185	No Systematic Identification Attempted	Wood, 3 mm+	<5
1-47-186	No Identifiable Carbonized Plant Remains	Not Applicable	
1-481-211	No Identifiable Carbonized Plant Remains	Not Applicable	
1-481-212	Goosefoot	Seeds, Carbonized	1
1-481-212	No Systematic Identification Attempted	Wood, <3 mm	<5
1-481-216	No Identifiable Carbonized Plant Remains	Not Applicable	
1-481-219	No Systematic Identification Attempted	Wood, <3 mm	<5
1-481-221	No Identifiable Carbonized Plant Remains	Not Applicable	
1-481-222	No Identifiable Carbonized Plant Remains	Not Applicable	
1-481-223	No Systematic Identification Attempted	Wood, 3 mm+	2
1-481-228	No Identifiable Carbonized Plant Remains	Not Applicable	
1-481-230	No Identifiable Carbonized Plant Remains	Not Applicable	
1-88-241	No Identifiable Carbonized Plant Remains	Not Applicable	
1-88-243	No Systematic Identification Attempted	Seed, Uncarbonized	<25
1-905-132	No Systematic Identification Attempted	Rodent Pellets	<25
1-905-132	No Systematic Identification Attempted	Wood, 3 mm+	<25
1-905-132	No Systematic Identification Attempted	Wood, <3 mm	<50
1-918-026	No Systematic Identification Attempted	Wood, 3 mm+	<50
1-918-026	No Systematic Identification Attempted	Wood, <3 mm	50-75
1-935-059	No Systematic Identification Attempted	Wood, 3 mm+	<25
1-935-059	No Systematic Identification Attempted	Wood, <3 mm	75-100
1-936-043	No Identifiable Carbonized Plant Remains	Not Applicable	
1-98-056	No Systematic Identification Attempted	Wood, 3 mm+	<25
1-98-056	No Systematic Identification Attempted	Seed, Uncarbonized	<5
1-98-057	No Identifiable Carbonized Plant Remains	Not Applicable	
1-98-059	No Systematic Identification Attempted	Wood, <3 mm	<25
1-98-060	No Systematic Identification Attempted	Seed, Uncarbonized	<25
1-98-060	No Systematic Identification Attempted	Wood, 3 mm+	<25
1-99-121	No Identifiable Carbonized Plant Remains	Not Applicable	
1-99-123	No Systematic Identification Attempted	Seed, Uncarbonized	<5
1-99-126	No Identifiable Carbonized Plant Remains	Not Applicable	
1-99-130	No Systematic Identification Attempted	Seed, Uncarbonized	<25

[1] Because all samples were scanned, the counts should be considered estimates.

Table E-3 Samples Producing Identifiable Charred Plant Remains.

Catalog No.	Feature No.	Common	Part
1-1129-182	4	No Systematic Identification Attempted (Quick scan noted only oak wood)	Wood, 3 mm+
1-1129-183	3	No Systematic Identification Attempted	Wood, 3 mm+
1-1129-183	3	No Systematic Identification Attempted	Wood, <3 mm
1-115-229	2	No Systematic Identification Attempted	Wood, <3 mm
1-117-108	1	Lily Family	Bulb
1-317-350	2	No Systematic Identification Attempted (Quick scan noted variation: sycamore, willow/cottonwood, oak, and elm)	Wood, 3 mm+
1-379-135	1	Indeterminable	Seeds, Carbonized
1-44-109	1	No Systematic Identification Attempted	Wood, <3 mm
1-44-118	1	Legume Family	Seed
1-44-118	1	No Systematic Identification Attempted	Wood, <3 mm
1-47-185	1	No Systematic Identification Attempted	Wood, 3 mm+
1-481-212	2	Goosefoot	Seeds, Carbonized
1-481-212	2	No Systematic Identification Attempted	Wood, <3 mm
1-481-219	1	No Systematic Identification Attempted	Wood, <3 mm
1-481-223	4	No Systematic Identification Attempted	Wood, 3 mm+
1-905-132		No Systematic Identification Attempted (Quick noted variation: oak, elm, and other hardwoods).	Wood, 3 mm+
1-905-132		No Systematic Identification Attempted	Wood, <3 mm
1-918-025	1	No Systematic Identification Attempted (Quick scan noted variation: oak, elm, and cf. maple).	Wood, 3 mm+
1-918-026	1	No Systematic Identification Attempted	Wood, <3 mm
1-935-059		No Systematic Identification Attempted	Wood, 3 mm+
1-935-059		No Systematic Identification Attempted	Wood, <3 mm
1-98-056	6	No Systematic Identification Attempted	Wood, 3 mm+
1-98-059	7	No Systematic Identification Attempted	Wood, <3 mm
1-98-060	4	No Systematic Identification Attempted	Wood, 3 mm+
1-98-060	4	No Systematic Identification Attempted	Seed, Uncarbonized
1-99-123	2	No Systematic Identification Attempted	Seed, Uncarbonized
1-99-130	2	No Systematic Identification Attempted	Seed, Uncarbonized

It may have been introduced by some agent other than human occupation, but its presence signals the potential for the recovery of more substantial data. The legume seed (1-44-118) came from a small herbaceous member of the bean family, but was not identifiable to genus.

The small spherical seeds in sample 1-379-135 may belong to the genus *Galium*, but were to corroded to identify with certainty. As previously mentioned, no systematic attempt was made to identify the wood, but some samples were arbitrarily examined to determine how much variation existed within each sample. This is noted above in Table E-3. The most variation was encountered in sample numbers 1-905-32, 1-918-26, and 1-317-350. These are likely features that were reused and possibly used for more than one purpose.

Recommendations should be based on more information than macrobotanical evidence alone. The samples in Table E-3, however, indicate by the presence of charred plant remains the existence of potential "hot spots" for the recovery of plant subsistence data from the archaeological sites in this study.

APPENDIX F

Radiocarbon Data

Site	TP	Level	Cat. No.	Material	Laboratory	Lab ID	Snail Ref. No.	Date (BP)	C13/C12 Ratio
BL0154	2	19	2-154-144	charcoal	Beta Analytic	B-75266		5740±60	-24.5
BL0154	2	21	2-154-337	charcoal/soil	Beta Analytic	B-72487		6100±60	-25.4
BL0154	2	25	2-154-338	charcoal/soil	Beta Analytic	B-72488		8600±50	-25.7
BL0154	3	6	2-154-245	charcoal	Beta Analytic	B-75267		1680±60	-25.2
BL0198	1	8	2-198-057	charcoal	Beta Analytic	B-72969		390±60	-26.6
BL0233	1	2	2-233-016	charcoal	Beta Analytic	B-65340		1680±60	-22.5
BL0233	1	4	2-233-002	charcoal	Beta Analytic	B-64242		1850±90	-26.3
BL0233	1	5	2-233-003	charcoal	Beta Analytic	B-64243		2840±70	-25.1
BL0233	1	5	2-233-004	charcoal	Beta Analytic	B-64244		630±70	-25.8
BL0233	1	5	2-233-013	seeds	Beta Analytic	B-64262		modern	
BL0233	1	7	2-233-005	charcoal	Beta Analytic	B-64245		2880±70	-24.4
BL0233	1	7	2-233-014	humate	Univ. of Texas	TX-7946		1759±49	-22.2
BL0233	2	2	2-233-006	charcoal	Beta Analytic	B-64246		860±70	-25.9
BL0233	2	2	2-233-010	bone	Beta Analytic	B-65259		170±50	-22.4
BL0233	2	3	2-233-007	charcoal	Beta Analytic	B-64247		870±70	26.4
BL0233	2	5	2-233-008	charcoal	Beta Analytic	B-64248		670±70	-25.8
BL0233	2	5	2-233-009	charcoal	Beta Analytic	B-64249		650±70	-26.7
BL0233	2	5	2-233-015	humate	Univ. of Texas	TX-7948		1214±44	-22.1
BL0233	2	5	2-233-012	seeds	Beta Analytic	B-64261		modern	
BL0339	0	30	2-339-071	charcoal/soil	Beta Analytic	B-74346		1460±60	-26.5
BL0339	4	18	2-339-229	charcoal	Beta Analytic	B-74347		1270±120	-28.0
BL0433	1	3	2-433-175	charcoal	Beta Analytic	B-75167		1130±170	-27.5
BL0504	1	4	2-504-033	charcoal	Univ. of Texas	TX-8424		1270±70	-26.0
BL0531	2	7	2-531-049	charcoal	Beta Analytic	B-83252		modern	-25.2
BL0532	3	3	2-532-056	snail shell	Beta Analytic	B-78134	CB-454	3720±50	-9.6
BL0532	4	4	2-532-064	snail shell	Beta Analytic	B-78137	CB-429	4670±60	-8.7
BL0532	6	8	2-532-123	snail shell	Beta Analytic	B-78133	CB-432	3580±60	-7.4
BL0560	5	5	2-560-084	charcoal	Univ. of Texas	TX-8416		1770±50	-24.4
BL0564	2	8	2-564-036	charcoal	Beta Analytic	B-73900		200±60	-24.7
BL0564	2	9	2-564-037	charcoal	Beta Analytic	B-73901		690±50	-25.6
BL0567	2	2	2-567-030	charcoal	Beta Analytic	B-74069		790±50	-25.9
BL0598	1	2	2-598-001	charcoal	Beta Analytic	B-64250			
BL0598	1	2	2-598-004	humate	Univ. of Texas	TX-7947		925±50	-22.5
BL0598	1	3	2-598-007	charcoal	Beta Analytic	B-65341		1240±70	-26.7
BL0598	1	3	2-598-157	snail shell	Beta Analytic	B-69547	CB-86	1840±80	-9.9
BL0598	1	3	2-598-158	snail shell	Beta Analytic	B-69548	CB-87	6120±70	-9.8
BL0598	1	3	2-598-159	snail shell	Beta Analytic	B-69551	CB-100	1230±60	-8.7
BL0598	1	3	2-598-160	snail shell	Beta Analytic	B-69552	CB-101	2130±60	-8.1
BL0598	1	5	2-598-002	charcoal	Beta Analytic	B-64251			
BL0598	1	5	2-598-005	humate	Univ. of Texas	TX-7944		2113±50	-22
BL0598	1	5	2-598-162	snail shell	Beta Analytic	B-69555	CB-132	6770±60	-10.4
BL0598	1	5	2-598-163	snail shell	Beta Analytic	B-69556	CB-133	6820±60	-6.4
BL0598	1	5	2-598-008	charcoal	Beta Analytic	B-65342		1230±60	-25.5
BL0598	1	7	2-598-009	charcoal	Beta Analytic	B-65343		6150±60	-26
BL0598	1	7	2-598-164	snail shell	Beta Analytic	B-69549	CB-92	8340±60	-8.6
BL0598	1	7	2-598-165	snail shell	Beta Analytic	B-69550	CB-93	5900±80	-8.9
BL0598	1	7	2-598-166	snail shell	Beta Analytic	B-69553	CB-108	7680±60	-8.2
BL0598	1	7	2-598-167	snail shell	Beta Analytic	B-69554	CB-128	7040±80	-7.9
BL0598	1	9	2-598-003	charcoal	Beta Analytic	B-64252			
BL0598	1	9	2-598-006	humate	Univ. of Texas	TX-7945		2909±51	-21.7
BL0608	1	2	2-608-001	charcoal	Beta Analytic	B-64256		1050±70	-26.5
BL0608	1	5	2-608-002	charcoal	Beta Analytic	B-64257		1040±70	-25.6

Site	TP	Level	Cat. No.	Material	Laboratory	Lab ID	Snail Ref. No.	Date (BP)	C13/C12 Ratio
BL0608	1	5	2-608-004	humate	Univ. of Texas	TX-7943		1469±43	-20.9
BL0608	1	6	2-608-003	charcoal	Beta Analytic	B-64258		710±50	-25.8
BL0608	1	6	2-608-005	humate	Univ. of Texas	TX-7942		1750±44	-19.1
BL0740	5	5	2-740-109	charcoal	Beta Analytic	B-74070		110±60	-25.5
BL0743	1	2	2-743-001	charcoal	Beta Analytic	B-64253		1030±70	-26.6
BL0743	1	4	2-743-002	charcoal	Beta Analytic	B-64254		3200±11	-26.2
BL0743	1	5	2-743-003	charcoal	Beta Analytic	B-64255		640±60	-26.1
BL0754	2	4	2-754-055	snail shell	Beta Analytic	B-78136	CB-506	820±60	-10.1
BL0755	0	15	2-755-127	charcoal/soil	Beta Analytic	B-74414		2470±50	-25.3
BL0755	2	5	2-755-056	charcoal	Beta Analytic	B-75169		1580±90	-26.7
BL0755	2	16	2-755-119	charcoal	Beta Analytic	B-75168		2460±60	-26.1
BL0755	4	19	2-755-137	snail shell	Beta Analytic	B-78135	CB-547	7250±50	-9.4
BL0773	5	3	2-773-066	charcoal	Univ. of Texas	TX-8425		1490±80	-26.9
BL0773	5	3	2-773-139	charcoal	Beta Analytic	B-83253		250±60	-29.0
BL0821	2	7	2-821-122	charcoal	Beta Analytic	B-75170		1220±70	-27.5
BL0844	2	3	2-844-140	charcoal	Univ. of Texas	TX-8426		690±100	-26.2
BL0844	5	5	2-844-247	charcoal	Univ. of Texas	TX-8427		790±90	-26.4
BL0844	10	3	2-844-502	charcoal	Beta Analytic	B-83254		1070±50	-27.5
BL0886	6	3	2-886-151	charcoal	Beta Analytic	B-75171		120±70	-27.2
BL0888	4	3	2-888-026	charcoal	Univ. of Texas	TX-8191		640±40	-26.1
CV0044	3	8	1-44-038	charcoal	Beta Analytic	B-83255		930±50	-24.1
CV0046	3	4	1-46-131	charcoal	Beta Analytic	B-83523		1010±70	-25.6
CV0046	4	8	1-46-275	charcoal	Beta Analytic	B-83256		1720±50	-26.3
CV0047	1	6	1-47-060	charcoal	Beta Analytic	B-83257		700±50	-25.0
CV0048	1	6	1-48-522	charcoal	Beta Analytic	B-83342		3790±50	-26.0
CV0048	2	11	1-48-456	charcoal	Beta Analytic	B-83341		970±100	-24.8
CV0048	2	17	1-48-437	charcoal	Beta Analytic	B-83421		3510±40	-24.2
CV0088	1	6	1-88-213	charcoal	Beta Analytic	B-83259		1740±60	-29.3
CV0088	1	11	1-88-228	charcoal	Univ. of Texas	TX-8417		2240±60	-26.1
CV0088	2	6	1-88-195	charcoal	Beta Analytic	B-83258		2660±50	-29.1
CV0095	4	8	1-95-198	charcoal	Beta Analytic	B-75150		1080±60	-26.6
CV0095	5	7	1-95-197	charcoal	Beta Analytic	B-75149		1410±60	-26.6
CV0097	0	19	1-97-675	charcoal/soil	Beta Analytic	B-74068		1150±50	-26.0
CV0097	1	12	1-97-266	charcoal	Beta Analytic	B-75262		3090±100	-28.5
CV0097	3	23	1-97-553	charcoal	Beta Analytic	B-75154		690±70	-28.5
CV0097	6	15	1-97-531	charcoal	Beta Analytic	B-75152		2890±60	-24.8
CV0097	7	13	1-97-486	charcoal/soil	Beta Analytic	B-75151		2900±70	-25.6
CV0097	10	31	1-97-921	charcoal/soil	Univ. of Texas	TX-8189		2380±60	-24.9
CV0098	1	4	1-98-058	charcoal	Beta Analytic	B-83344		1220±60	-26.2
CV0098	1	11	1-98-033	charcoal	Beta Analytic	B-83427		1430±70	-24.0
CV0098	2	13	1-98-049	charcoal	Beta Analytic	B-83343		1060±60	-26.0
CV0099	1	2	1-99-140	charcoal	Beta Analytic	B-83422		2810±110	-24.9
CV0099	1	12	1-99-054a	bone	Beta Analytic	B-84200		3950±50	-18.6
CV0099	2	14	1-99-148	charcoal	Beta Analytic	B-83345		3960±60	-27.0
CV0115	3	4	1-115-103	charcoal	Univ. of Texas	TX-8418		820±40	-26.0
CV0115	3	8	1-115-177	charcoal	Beta Analytic	B-83260		1240±40	-24.9
CV0115	3	9	1-115-230	charcoal	Beta Analytic	B-83261		1260±50	-27.5
CV0117	2	6	1-117-070	charcoal	Beta Analytic	B-83262		2140±50	-27.5
CV0117	4	7	1-117-191	charcoal	Beta Analytic	B-83524		4040±50	-27.5
CV0124	1	4	1-124-002	charcoal	Beta Analytic	B-64225		3560±90	-25.3
CV0124	1	9	1-124-003	charcoal	Beta Analytic	B-65693		1915±55	-23.7
CV0124	2	4	1-124-005	charcoal	Beta Analytic	B-64228		180±70	-27.5

Site	TP	Level	Cat. No.	Material	Laboratory	Lab ID	Snail Ref. No.	Date (BP)	C13/C12 Ratio
CV0124	2	7	1-124-001	charcoal	Beta Analytic	B-64224		3760±70	-25.5
CV0125	2	3	1-125-030	charcoal	Univ. of Texas	TX-8419		900±90	-26.5
CV0137	2	10	1-137-136	bone	Beta Analytic	B-84201		2210±60	-25.3
CV0137	2	14	1-137-250	charcoal	Beta Analytic	B-75155		3630±60	-25.4
CV0164	1	5	1-164-008	charcoal/soil	Beta Analytic	B-73192		410±80	-26.4
CV0174	0	3	1-174-004	charcoal/soil	Beta Analytic	B-70658		180±60	-27.4
CV0174	1	15	1-174-152	charcoal/soil	Beta Analytic	B-75156		1650±60	-26.3
CV0174	1	21	1-174-230	charcoal/soil	Univ. of Texas	TX-8192		1870±90	-26.3
CV0174	2	14	1-174-131	charcoal/soil	Beta Analytic	B-75264		1910±60	-23.7
CV0174	4	7	1-174-005	charcoal/soil	Beta Analytic	B-70659		510±50	-25.4
CV0174	7	12	1-174-303	charcoal	Beta Analytic	B-75157		5240±50	-27.8
CV0184	1	2	1-184-210	charcoal	Beta Analytic	B-83525		1280±60	-27.2
CV0184	1	5	1-184-165	charcoal	Beta Analytic	B-83346		2160±50	-27.5
CV0184	2	29	1-184-173	charcoal	Beta Analytic	B-83418		6230±60	-26.9
CV0317	1	10	1-317-066	charcoal	Univ. of Texas	TX-8420		960±50	-27.0
CV0317	5	12	1-317-437	charcoal	Beta Analytic	B-83263		920±70	-18.9
CV0317	5	16	1-317-445	charcoal	Beta Analytic	B-83458		1300±60	-26.4
CV0317	5	17	1-317-436	charcoal	Univ. of Texas	TX-8428		1940±60	-26.4
CV0317	5	22	1-317-079	charcoal	Beta Analytic	B-83423		1190±90	-25.3
CV0319	3	5	1-319-039	charcoal	Beta Analytic	B-71166		990±50	-25.8
CV0379	1	5	1-379-134	charcoal	Beta Analytic	B-83347		130±60	-23.2
CV0380	1	3	1-380-050	charcoal	Beta Analytic	B-83348		1250±50	-26.7
CV0389	1	7	1-389-037	charcoal	Beta Analytic	B-83419		640±130	-26.8
CV0389	1	19	1-389-175	charcoal	Beta Analytic	B-83424		1620±60	-27.3
CV0389	2	8	1-389-228	charcoal	Beta Analytic	B-83349		2490±60	-27.1
CV0389	2	16	1-389-035	charcoal	Beta Analytic	B-83350		4190±60	-29.0
CV0389	2	20	1-389-257	charcoal	Beta Analytic	B-83351		4430±50	-30.1
CV0403	2	6	1-403-348	charcoal	Beta Analytic	B-83420		360±60	-26.5
CV0403	2	10	1-403-438	charcoal	Beta Analytic	B-83352		3890±40	-25.1
CV0478	4	5	1-478-010	snail shell	Beta Analytic	B-88352	CD-291;CD-381	4620±50	-9.6
CV0478	4	8	1-478-013	snail shell	Beta Analytic	B-88353	CD-298;CD382	5080±60	-8.7
CV0478	4	8	1-478-013	snail shell	Beta Analytic	B-88354	CD-299;CD-383	5160±70	-9.3
CV0481	0	22	1-481-125	charcoal	Beta Analytic	B-83425		3940±220	-26.2
CV0481	1	21	1-481-111	snail shell	Beta Analytic	B-84205	CD-119	4380±60	-8.8
CV0481	1	27	1-481-210	charcoal	Beta Analytic	B-83526		4430±60	-26.7
CV0481	1	33	1-481-134	snail shell	Beta Analytic	B-84206	CD-133	4860±60	-9.2
CV0481	1	34	1-481-203	charcoal	Beta Analytic	B-83353		4860±50	-24.0
CV0481	4	6	1-481-234	charcoal	Beta Analytic	B-83527		1580±60	-26.7
CV0495	1	12	1-495-042	charcoal	Beta Analytic	B-83528		3600±60	-9999
CV0587	3	3	1-587-162	charcoal	Beta Analytic	B-74467		260±70	-27.5
CV0594	1	4	1-594-001	charcoal	Beta Analytic	B-64229		1520±70	-25.9
CV0594	2	2	1-594-002	charcoal	Beta Analytic	B-64230		170±70	-27.2
CV0594	2	4	1-594-003	charcoal	Beta Analytic	B-64231		4350±60	-26.7
CV0594	2	6	1-594-004	charcoal	Beta Analytic	B-64232		4100±70	-26.9
CV0595	1	3	1-595-020	charcoal/soil	Beta Analytic	B-70034		1240±70	-26.2
CV0595	1	6	1-595-021	charcoal	Beta Analytic	B-70035		920±80	-25.1
CV0595	3	5	1-595-019	charcoal/soil	Beta Analytic	B-70033		1860±80	-26.0
CV0905	5	4	1-905-048	charcoal	Beta Analytic	B-83354		790±50	-27.3
CV0905	5	11	1-905-130	charcoal	Beta Analytic	B-83355		4070±40	-26.5
CV0918	2	22	1-918-025	charcoal	Beta Analytic	B-86983		460±70	-27.0
CV0935	2	2	1-935-044	charcoal	Beta Analytic	B-83426		780±70	-25.3
CV0936	2	2	1-936-031	charcoal	Beta Analytic	B-83529		770±60	-26.7

Site	TP	Level	Cat. No.	Material	Laboratory	Lab ID	Snail Ref. No.	Date (BP)	C13/C12 Ratio
CV0960	2	5	1-960-034	charcoal	Beta Analytic	B-70039		1730±60	-26.5
CV0960	2	8	1-960-032	charcoal	Beta Analytic	B-70037		1690±60	-27.2
CV0960	4	7	1-960-033	charcoal	Beta Analytic	B-70038		3200±60	-25.5
CV1007	1	12	1-1007-115	charcoal	Beta Analytic	B-75158		2470±60	-27.9
CV1011	1	2	1-1011-041	charcoal	Beta Analytic	B-74468		1740±60	-26.2
CV1011	1	6	1-1011-150	charcoal	Beta Analytic	B-74469		2610±60	-26.3
CV1027	1	4	1-1027-001	charcoal	Beta Analytic	B-64233		4200±80	-25.9
CV1027	1	4	1-1027-002	charcoal	Beta Analytic	B-64234		4370±70	-25.7
CV1027	1	5	1-1027-003	charcoal	Beta Analytic	B-64235		4490±60	-24.3
CV1027	2	4	1-1027-004	charcoal	Beta Analytic	B-64236		4360±80	-25.5
CV1038	1	6	1-1038-056	charcoal	Univ. of Texas	TX-8190		360±30	-27.0
CV1038	3	7	1-1038-141	charcoal	Beta Analytic	B-75159		1140±60	-24.7
CV1038	3	12	1-1038-154	bone	Beta Analytic	B-84202		3000±60	-10.2
CV1038	3	19	1-1038-168	charcoal	Beta Analytic	B-75160		3720±60	-25.3
CV1080	2	3	1-1080-136	charcoal	Univ. of Texas	TX-8429		1250±60	-26.3
CV1080	2	7	1-1080-025	charcoal	Beta Analytic	B-83264		1950±60	-25.6
CV1085	1	3	1-1085-032	charcoal	Beta Analytic	B-75161		380±70	-25.5
CV1105	1	28	1-1105-228	charcoal	Beta Analytic	B-70032		6280±60	-24.7
CV1105	1	49	1-1105-229	charcoal	Beta Analytic	B-70031		7190±90	-24.5
CV1129	0	18	1-1129-129	charcoal	Beta Analytic	B-83265		1400±60	-27.8
CV1129	2	12	1-1129-130	charcoal	Univ. of Texas	TX-8421		2140±70	-27.0
CV1129	3	12	1-1129-139	charcoal	Univ. of Texas	TX-8422		1550±110	-27.0
CV1136	3	8	1-1136-237	charcoal	Beta Analytic	B-75163		1920±80	-26.1
CV1136	3	18	1-1136-238	charcoal	Beta Analytic	B-75164		2990+/-60	-25.6
CV1136	6	4	1-1136-135	charcoal	Beta Analytic	B-75162		1310±110	-27.1
CV1165	1	8	1-1165-044	charcoal	Univ. of Texas	TX-8430		1580±80	-25.8
CV1166	1	2	1-1166-049	charcoal	Beta Analytic	B-83530		810±60	-25.5
CV1167	1	4	1-1167-088	charcoal/soil	Beta Analytic	B-75265		410±80	-27.6
CV1167	1	4	1-1167-113	wood	Beta Analytic	B-79049		610±50	-26.5
CV1195	1	2	1-1195-001	charcoal	Beta Analytic	B-64238		1920±70	-26.9
CV1195	1	4	1-1195-002	charcoal	Beta Analytic	B-64239		1700±60	-26.1
CV1195	1	6	1-1195-003	charcoal	Beta Analytic	B-64240		1980±90	-27.1
CV1200	1	21	1-1200-077	snail shell	Beta Analytic	B-78132	CB-157	1530±50	-10.3
CV1200	2	7	1-1200-003	charcoal	Beta Analytic	B-70030		740±60	-27.0
CV1200	2	11	1-1200-002	charcoal	Beta Analytic	B-70027		1240±60	-26.0
CV1200	2	18	1-1200-004	charcoal	Beta Analytic	B-70565		1260±60	-26.2
CV1378	1	5	1-1378-007	snail shell	Beta Analytic	B-88355	CD-315;CD-384	2960±50	-9.0
CV1391	2	4	1-1391-082	charcoal	Univ. of Texas	TX-8188		1030±30	-27.1
CV1391	2	5	1-1391-084	charcoal	Beta Analytic	B-75166		810±50	-25.9
CV1391	4	3	1-1391-083	charcoal	Beta Analytic	B-75165		1760±100	-28.8
CV1403	1	5	1-1403-023	snail shell	Beta Analytic	B-88356	CD-328;CD-385	3890±50	-8.5
CV1403	1	5	1-1403-023	snail shell	Beta Analytic	B-88357	CD-332;CD-386	3290±50	-8.9
CV1471	1	14	1-1471-077	charcoal	Beta Analytic	B-83356		1360±40	-26.3
CV1471	3	21	1-1471-058	charcoal	Univ. of Texas	TX-8423		2080±70	-27.8

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Table G-1 Count of Lithic Class by Chert Province and Chert Type for Nolan/South Site Group.

		Class				
Chert Province	Material	Core	Debitage	Point	Tool	Total
Identified Types						
Cowhouse	18-C Mottled	0	15	0	8	23
	19-C Dr Gray	0	1	0	1	2
	21-C Lgt Gray	0	4	0	0	4
	22-C Mott/Flecks	1	46	0	19	66
	23-C Mott/Banded	0	6	0	2	8
	26-C Striated	0	26	0	0	26
	28-Table Rock Flat	0	1	0	0	1
	Subtotal	*1*	*99*	*0*	*30*	*130*
North Fort	08-FH Yellow	0	39	1	5	45
	11-ER Flat	0	1	0	0	1
	14-FH Gray	1	39	0	4	44
	15-Gry/Brn/Grn	0	25	1	3	29
	16-Leona Park	0	4	0	0	4
	17-Owl Crk Black	0	73	4	3	80
	Subtotal	*1*	*181*	*6*	*15*	*203*
Southeast Range	HL Blue (1&10)	6	1009	0	25	1040
	02-C White	0	40	0	3	43
	05-Texas Novac	0	5	0	0	5
	06-HL Tan	11	2442	13	114	2580
	07-Foss Pale Brown	1	18	0	4	23
	09-HL Tr Brown	2	4198	5	89	4294
	13-ER Flecked	0	18	1	0	19
	Subtotal	*20*	*7730*	*19*	*235*	*8004*
West Fort	03-AM Gray	0	56	0	1	57
	04-7 Mile Novac	0	14	0	0	14
	Subtotal	*0*	*70*	*0*	*1*	*71*
Subtotal		***22***	***8080***	***25***	***281***	***8408***
Unidentified Types						
	Indet Black	0	111	2	1	114
	Indet Dk Brown	0	5165	12	23	5200
	Indet Dk Gray	1	780	5	9	795
	Indet Lt Brown	2	5475	16	92	5585
	Indet Lt Gray	0	1994	4	17	2015
	Indet Misc.	0	1840	2	7	1849
	Indet Mottled	0	89	3	6	98
	Indet Trans	0	208	0	0	208
	Indet White	1	616	6	9	632
	Subtotal	*4*	*16278*	*50*	*164*	*16496*
Total		**26**	**24358**	**75**	**445**	**24904**

Table G-2 Count of Lithic Debitage by Chert Province and Chert Type for Sites within the Nolan/South Site Group.

Chert Province	Lithic Material	Site: BL0154	BL0208	BL0740	BL0821	BL0834	BL0844	BL0850	Total
Identified Types									
Cowhouse	18-C Mottled	2	0	0	4	0	9	0	15
	19-C Dr Gray	1	0	0	0	0	0	0	1
	21-C Lgt Gray	0	0	0	4	0	0	0	4
	22-C Mott/Flecks	1	1	0	36	6	2	0	46
	23-C Mott/Banded	0	0	0	5	0	1	0	6
	26-C Striated	0	0	0	26	0	0	0	26
	28-Table Rock Flat	0	1	0	0	0	0	0	1
	Subtotal	*4*	*2*	*0*	*75*	*6*	*12*	*0*	*99*
North Fort	08-FH Yellow	21	0	5	6	0	7	0	39
	11-ER Flat	1	0	0	0	0	0	0	1
	14-FH Gray	0	0	1	20	0	18	0	39
	15-Gry/Brn/Grn	17	0	4	2	2	0	0	25
	16-Leona Park	2	0	1	0	1	0	0	4
	17-Owl Crk Black	12	0	17	23	3	18	0	73
	Subtotal	*53*	*0*	*28*	*51*	*6*	*43*	*0*	*181*
Southeast Range	HL Blue (1&10)	102	2	7	480	16	402	0	1009
	02-C White	6	0	3	12	0	19	0	40
	05-Texas Novac	0	0	1	4	0	0	0	5
	06-HL Tan	18	7	27	2038	26	326	0	2442
	07-Foss Pale Brown	9	0	8	0	0	1	0	18
	09-HL Tr Brown	1426	2	231	2167	58	314	0	4198
	13-ER Flecked	5	0	0	9	1	3	0	18
	Subtotal	*1566*	*11*	*277*	*4710*	*101*	*1065*	*0*	*7730*
West Fort	03-AM Gray	4	0	8	31	0	13	0	56
	04-7 Mile Novac	0	0	0	10	0	4	0	14
	Subtotal	*4*	*0*	*8*	*41*	*0*	*17*	*0*	*70*
Subtotal		***1627***	***13***	***313***	***4877***	***113***	***1137***	***0***	***8080***
Unidentified Types									
	Indet Black	14	0	0	75	0	22	0	111
	Indet Dk Brown	238	2	51	4394	12	468	0	5165
	Indet Dk Gray	66	1	18	208	3	484	0	780
	Indet Lt Brown	1167	35	132	2524	384	1225	8	5475
	Indet Lt Gray	202	0	64	1041	77	609	1	1994
	Indet Misc.	329	2	26	1003	31	446	3	1840
	Indet Mottled	12	2	4	21	4	46	0	89
	Indet Trans	57	0	0	7	3	137	4	208
	Indet White	123	9	13	171	26	271	3	616
	Subtotal	*2208*	*51*	*308*	*9444*	*540*	*3708*	*19*	*16278*
Total		**3835**	**64**	**621**	**14321**	**653**	**4845**	**19**	**24358**

Table G-3 Percentage of Lithic Debitage Characteristics by Chert Type for Nolan/South Site Group.

		Total Debitage			Small Debitage (<0.9 cm)		Large Debitage (>1.8 cm)		Medium Debitage 0.9 to 1.8 cm
Lithic Material	N	decorticate	partial cortex	all cortex	Total	decorticate	Total	decorticate	Total
HL Blue (1&10)	1009	93%	6%	0%	25%	98%	28%	82%	47%
02-C White	40	65%	30%	0%	5%	0%	65%	62%	30%
03-AM Gray	56	79%	18%	0%	27%	73%	25%	93%	48%
04-7 Mile Novac	14	100%	0%	0%	71%	100%	0%	0%	29%
05-Texas Novac	5	80%	20%	0%	0%	0%	100%	80%	0%
06-HL Tan	2442	95%	5%	0%	45%	100%	15%	81%	39%
07-Foss Pale Brown	18	78%	22%	0%	17%	100%	78%	79%	6%
08-FH Yellow	39	92%	8%	0%	5%	100%	26%	100%	69%
09-HL Tr Brown	4198	94%	6%	0%	32%	99%	20%	82%	48%
11-ER Flat	1	100%	0%	0%	0%	0%	0%	0%	100%
13-ER Flecked	18	100%	0%	0%	0%	0%	28%	100%	72%
14-FH Gray	39	95%	5%	0%	0%	0%	64%	100%	36%
15-Gry/Brn/Grn	25	88%	12%	0%	12%	100%	32%	88%	56%
16-Leona Park	4	100%	0%	0%	0%	0%	50%	100%	50%
17-Owl Crk Black	73	92%	8%	0%	50%	94%	13%	78%	38%
18-C Mottled	15	80%	13%	7%	0%	0%	33%	40%	67%
19-C Dr Gray	1	0%	100%	0%	0%	0%	100%	0%	0%
21-C Lgt Gray	4	75%	25%	0%	25%	100%	25%	0%	50%
22-C Mott/Flecks	46	87%	13%	0%	2%	100%	74%	63%	24%
23-C Mott/Banded	6	0%	83%	0%	0%	0%	100%	0%	0%
26-C Striated	26	100%	0%	0%	0%	0%	0%	0%	100%
28-Table Rock Flat	1	100%	0%	0%	0%	0%	100%	100%	0%
Indet Black	111	86%	13%	1%	36%	98%	3%	2%	61%
Indet Dk Brown	5165	96%	4%	0%	60%	99%	8%	6%	32%
Indet Dk Gray	780	91%	6%	0%	43%	97%	7%	6%	50%
Indet Lt Brown	5475	89%	10%	0%	54%	97%	11%	69%	34%
Indet Lt Gray	1994	94%	5%	0%	46%	98%	11%	83%	43%
Indet Misc.	1840	58%	31%	2%	42%	59%	9%	48%	49%
Indet Mottled	89	64%	31%	1%	3%	0%	47%	57%	49%
Indet Trans	208	93%	7%	0%	36%	99%	6%	92%	58%
Indet White	616	89%	7%	1%	44%	96%	11%	70%	45%

Table G-4 Count of Lithic Class by Chert Province and Chert Type for Nolan/Cowhouse Site Group.

		Class				
Chert Province	Material	Core	Debitage	Point	Tool	Total
Identified Types						
Cowhouse	18-C Mottled	1	8	0	1	10
	19-C Dr Gray	0	1	0	0	1
	20-C Shell Hash	0	1	0	0	1
	22-C Mott/Flecks	0	3	0	1	4
	23-C Mott/Banded	0	1	0	0	1
	26-C Striated	0	0	0	1	1
	27-C Novaculite	0	1	0	0	1
	Subtotal	*1*	*15*	*0*	*3*	*19*
North Fort	08-FH Yellow	0	27	1	1	29
	11-ER Flat	0	2	0	0	2
	14-FH Gray	0	9	0	2	11
	15-Gry/Brn/Grn	0	11	1	4	16
	17-Owl Crk Black	0	36	2	2	40
	Subtotal	*0*	*85*	*4*	*9*	*98*
Southeast Range	HL Blue (1&10)	1	256	1	11	269
	02-C White	0	81	0	3	84
	06-HL Tan	1	627	11	32	671
	07-Foss Pale Brown	0	149	0	7	156
	09-HL Tr Brown	0	623	0	12	6[illegible]
	13-ER Flecked	0	24	0	1	25
	Subtotal	*2*	*1760*	*12*	*66*	*1840*
West Fort	03-AM Gray	0	134	0	2	136
Subtotal		*3*	***1994***	*16*	*80*	*2093*
Unidentified Types						
	Indet Black	0	47	0	2	49
	Indet Dk Brown	0	1252	6	7	1265
	Indet Dk Gray	0	590	6	7	603
	Indet Lt Brown	8	4885	17	25	4935
	Indet Lt Gray	0	936	2	6	944
	Indet Misc.	1	597	2	7	607
	Indet Mottled	0	75	2	5	82
	Indet Trans	0	18	0	1	19
	Indet White	1	409	1	9	420
	Subtotal	*10*	*8809*	*36*	*69*	*8924*
Total		**13**	**10803**	**52**	**149**	**11017**

Table G-5 Count of Lithic Debitage by Chert Province and Chert Type for Sites within the Nolan/Cowhouse Site Group.

		Site												
Chert Province	Lithic Material	BL0168	BL0198	BL0433	BL0743	BL0744	BL0751	BL0754	BL0755	BL0765	BL0773	BL0886	BL0888	Total
Identified Types														
Cowhouse	18-C Mottled	0	0	3	0	0	0	0	1	0	4	0	0	8
	19-C Dr Gray	0	0	1	0	0	0	0	0	0	0	0	0	1
	20-C Shell Hash	0	0	0	0	0	0	0	0	1	0	0	0	1
	22-C Mott/Flecks	0	0	2	0	0	0	0	0	0	1	0	0	3
	23-C Mott/Banded	0	0	1	0	0	0	0	0	0	0	0	0	1
	26-C Striated	0	0	0	0	0	0	0	0	0	0	0	0	0
	27-C Novaculite	0	0	0	0	0	1	0	0	0	0	0	0	1
	Subtotal	*0*	*0*	*7*	*0*	*0*	*1*	*0*	*1*	*1*	*5*	*0*	*0*	*15*
North Fort	08-FH Yellow	2	2	12	0	0	0	6	1	0	1	2	1	27
	11-ER Flat	1	0	0	0	0	0	0	0	0	0	0	1	2
	14-FH Gray	1	0	5	0	0	0	0	2	0	1	0	0	9
	15-Gry/Brn/Grn	1	0	8	0	0	1	0	1	0	0	0	0	11
	17-Owl Crk Black	11	0	14	0	0	1	2	6	0	1	0	1	36
	Subtotal	*16*	*2*	*39*	*0*	*0*	*2*	*8*	*10*	*0*	*3*	*2*	*3*	*85*
Southeast Range	HL Blue (1&10)	25	1	86	10	2	11	7	98	5	6	0	5	256
	02-C White	34	1	11	0	0	0	8	16	0	4	4	3	81
	06-HL Tan	91	8	149	5	2	7	106	187	20	2	7	43	627
	07-Foss Pale Brown	25	3	17	0	0	3	0	11	0	13	7	70	149
	09-HL Tr Brown	80	2	46	0	3	2	53	387	28	2	3	17	623
	13-ER Flecked	16	0	3	0	0	1	0	0	4	0	0	0	24
	Subtotal	*271*	*15*	*312*	*15*	*7*	*24*	*174*	*699*	*57*	*27*	*21*	*138*	*1760*
West Fort	03-AM Gray	23	0	24	1	0	1	10	65	2	0	0	8	134
Subtotal		***310***	***17***	***382***	***16***	***7***	***28***	***192***	***775***	***60***	***35***	***23***	***149***	***1994***
Unidentified Types														
	Indet Black	10	1	24	0	0	0	1	1	1	9	0	0	47
	Indet Dk Brown	224	6	699	20	14	62	62	58	25	44	11	27	1252
	Indet Dk Gray	84	8	254	42	2	8	21	70	6	57	16	22	590
	Indet Lt Brown	656	31	2525	99	87	144	436	250	47	139	252	219	4885
	Indet Lt Gray	214	15	336	16	16	28	114	74	18	69	13	23	936
	Indet Misc.	68	10	268	40	0	0	51	68	1	38	12	41	597
	Indet Mottled	0	3	10	1	0	6	6	0	0	37	4	8	75
	Indet Trans	3	0	4	0	0	0	5	0	0	6	0	0	18
	Indet White	78	1	61	60	5	18	36	62	1	28	15	44	409
	Subtotal	*1337*	*75*	*4181*	*278*	*124*	*266*	*732*	*583*	*99*	*427*	*323*	*384*	*8809*
Other	Quartz	0	0	0	0	0	0	2	0	0	0	0	2	4
Total		**1647**	**92**	**4563**	**294**	**131**	**294**	**926**	**1358**	**159**	**462**	**346**	**535**	**10807**

Table G-6 Percentage of Lithic Debitage Characteristics by Chert Type for Nolan Cowhouse Site Group.

		Total Debitage			Small Debitage (<0.9 cm)		Large Debitage (>1.8 cm)		Medium Debitage 0.9 to 1.8 cm
Lithic Material	N	decorticate	partial cortex	all cortex	Total	decorticate	Total	decorticate	Total
HL Blue (1&10)	256	95%	5%	0%	13%	100%	26%	88%	62%
02-C White	81	81%	19%	0%	1%	100%	46%	65%	53%
03-AM Gray	134	85%	13%	1%	13%	94%	28%	66%	58%
06-HL Tan	626	92%	8%	0%	18%	99%	30%	80%	52%
07-Foss Pale Brown	148	48%	51%	0%	3%	100%	72%	39%	25%
08-FH Yellow	27	78%	22%	0%	0%	0%	41%	73%	59%
09-HL Tr Brown	623	93%	7%	0%	32%	100%	17%	74%	52%
11-ER Flat	2	50%	50%	0%	0%	0%	100%	50%	0%
13-ER Flecked	24	88%	13%	0%	8%	100%	8%	50%	83%
14-FH Gray	9	78%	22%	0%	0%	0%	22%	50%	67%
15-Gry/Brn/Grn	11	82%	18%	0%	9%	100%	55%	83%	36%
17-Owl Crk Black	36	89%	11%	0%	36%	92%	11%	50%	53%
18-C Mottled	8	38%	63%	0%	0%	0%	25%	0%	63%
19-C Dr Gray	1	0%	0%	100%	0%	0%	100%	0%	0%
20-C Shell Hash	1	100%	0%	0%	0%	0%	100%	100%	0%
22-C Mott/Flecks	3	100%	0%	0%	0%	0%	33%	33%	67%
23-C Mott/Banded	1	100%	0%	0%	0%	0%	100%	100%	0%
27-C Novaculite	1	0%	100%	0%	0%	0%	100%	0%	0%
Indet Black	47	96%	4%	0%	70%	100%	13%	11%	17%
Indet Dk Brown	1252	94%	5%	0%	58%	98%	8%	7%	34%
Indet Dk Gray	590	95%	3%	0%	53%	100%	5%	4%	42%
Indet Lt Brown	4885	89%	9%	0%	55%	96%	9%	61%	37%
Indet Lt Gray	936	93%	7%	0%	48%	98%	10%	66%	42%
Indet Misc.	597	64%	28%	2%	48%	84%	10%	22%	42%
Indet Mottled	75	47%	51%	0%	5%	25%	41%	39%	53%
Indet Trans	18	94%	6%	0%	28%	100%	6%	100%	67%
Indet White	409	76%	17%	2%	25%	85%	22%	55%	54%

Table G-7 Count of Lithic Class by Chert Province and Chert Type for East Cowhouse Site Group.

Chert Province	Material	Class				
		Core	Debitage	Point	Tool	Total
Identified Types						
Cowhouse	18-C Mottled	1	8	0	4	13
	20-C Shell Hash	0	1	0	0	1
	22-C Mott/Flecks	0	7	0	2	9
	23-C Mott/Banded	0	1	0	1	2
	Subtotal	*1*	*17*	*0*	*7*	*25*
North Fort	08-FH Yellow	0	10	0	2	12
	14-FH Gray	1	20	0	0	21
	15-Gry/Brn/Grn	1	24	0	0	25
	17-Owl Crk Black	0	21	0	0	21
	Subtotal	*2*	*75*	*0*	*2*	*79*
Southeast Range	HL Blue (1&10)	0	21	0	2	23
	02-C White	0	11	0	0	11
	06-HL Tan	0	61	1	7	69
	07-Foss Pale Brown	1	11	0	0	12
	09-HL Tr Brown	0	71	0	6	77
	Subtotal	*1*	*175*	*1*	*15*	*192*
West Fort	03-AM Gray	0	11	0	0	11
Subtotal		***4***	***278***	***1***	***24***	***307***
Unidentified Types						
	Indet Dk Brown	0	46	0	2	48
	Indet Dk Gray	0	45	1	2	48
	Indet Lt Brown	1	313	0	5	319
	Indet Lt Gray	0	41	0	0	41
	Indet Misc.	0	46	0	1	47
	Indet Mottled	0	15	0	8	23
	Indet Trans	0	10	0	0	10
	Indet White	0	79	1	1	81
	Subtotal	*1*	*595*	*2*	*19*	*617*
Total		**5**	**873**	**3**	**43**	**924**

Table G-8 Count of Lithic Debitage by Chert Province and Chert Type for Sites within the East Cowhouse Site Group.

		Site				
Chert Province	Lithic Material	BL0339	BL0415	BL0431	BL0470	Total
Cowhouse	18-C Mottled	3	0	5	0	8
	20-C Shell Hash	0	0	1	0	1
	22-C Mott/Flecks	7	0	0	0	7
	23-C Mott/Banded	0	1	0	0	1
	Subtotal	*10*	*1*	*6*	*0*	*17*
North Fort	08-FH Yellow	7	2	0	1	10
	14-FH Gray	9	0	5	6	20
	15-Gry/Brn/Grn	10	3	7	4	24
	17-Owl Crk Black	12	1	5	3	21
	Subtotal	*38*	*6*	*17*	*14*	*75*
Southeast Range	HL Blue (1&10)	9	0	5	7	21
	02-C White	8	0	3	0	11
	06-HL Tan	25	6	19	11	61
	07-Foss Pale Brown	6	2	2	1	11
	09-HL Tr Brown	14	6	49	2	71
	Subtotal	*62*	*14*	*78*	*21*	*175*
West Fort	03-AM Gray	7	0	4	0	11
Subtotal		***117***	***21***	***105***	***35***	***278***
Unidentified						
	Indet Dk Brown	24	4	11	7	46
	Indet Dk Gray	6	2	36	1	45
	Indet Lt Brown	104	104	46	59	313
	Indet Lt Gray	8	10	20	3	41
	Indet Misc.	14	0	32	0	46
	Indet Mottled	1	0	14	0	15
	Indet Trans	0	0	10	0	10
	Indet White	18	45	15	1	79
	Subtotal	*175*	*165*	*184*	*71*	*595*
Total		**292**	**186**	**289**	**106**	**873**

Table G-9 Percentage of Lithic Debitage Characteristics by Chert Type for East Cowhouse Site Group.

		Total Debitage			Small Debitage (<0.9 cm)		Large Debitage (>1.8 cm)		Medium Debitage 0.9 to 1.8 cm
Lithic Material	N	decorticate	partial cortex	all cortex	Total	decorticate	Total	decorticate	Total
HL Blue (1&10)	21	90%	10%	0%	10%	100%	62%	62%	29%
02-C White	11	100%	0%	0%	0%	0%	27%	100%	73%
03-AM Gray	11	82%	18%	0%	36%	75%	0%	0%	64%
06-HL Tan	61	84%	15%	0%	15%	100%	49%	80%	36%
07-Foss Pale Brown	11	27%	73%	0%	0%	0%	82%	22%	18%
08-FH Yellow	10	90%	10%	0%	10%	100%	40%	75%	50%
09-HL Tr Brown	71	90%	10%	0%	1%	100%	35%	72%	63%
14-FH Gray	20	80%	20%	0%	0%	0%	35%	57%	65%
15-Gry/Brn/Grn	24	79%	21%	0%	0%	0%	75%	78%	25%
17-Owl Crk Black	21	86%	14%	0%	14%	100%	14%	67%	71%
18-C Mottled	8	13%	88%	0%	0%	0%	88%	0%	13%
20-C Shell Hash	1	100%	0%	0%	0%	0%	100%	100%	0%
22-C Mott/Flecks	7	57%	43%	0%	0%	0%	100%	57%	0%
23-C Mott/Banded	1	0%	100%	0%	0%	0%	100%	0%	0%
Indet Dk Brown	46	63%	33%	4%	28%	100%	30%	7%	41%
Indet Dk Gray	45	89%	11%	0%	51%	100%	13%	4%	36%
Indet Lt Brown	313	77%	22%	0%	25%	92%	24%	59%	51%
Indet Lt Gray	41	85%	15%	0%	5%	100%	73%	90%	22%
Indet Misc.	46	74%	26%	0%	11%	100%	46%	62%	43%
Indet Mottled	15	47%	53%	0%	0%	0%	73%	45%	27%
Indet Trans	10	60%	40%	0%	50%	100%	20%	50%	30%
Indet White	79	84%	14%	0%	23%	100%	27%	57%	51%

Table G-10 Count of Lithic Class by Chert Province and Chert Type for Cowhouse/Taylor/Bear Site Group.

		Class				
Chert Province	Material	Core	Debitage	Point	Tool	Total
Identified Types						
Cowhouse	18-C Mottled	0	2	0	1	3
	19-C Dr Gray	0	1	1	0	2
	22-C Mott/Flecks	1	0	0	0	1
	23-C Mott/Banded	0	1	0	0	1
	Subtotal	*1*	*4*	*1*	*1*	*7*
North Fort	08-FH Yellow	0	71	2	2	75
	11-ER Flat	0	1	0	0	1
	14-FH Gray	0	13	0	0	13
	15-Gry/Brn/Grn	0	32	1	3	36
	17-Owl Crk Black	0	77	1	2	80
	Subtotal	*0*	*194*	*4*	*7*	*205*
Southeast Range	HL Blue(1&10)	0	32	0	0	32
	02-C White	0	19	0	1	20
	05-Texas Novac	0	1	0	0	1
	06-HL Tan	1	82	2	10	95
	07-Foss Pale Brown	0	3	0	0	3
	09-HL Tr Brown	0	24	0	2	26
	13-ER Flecked	0	1	0	0	1
	Subtotal	*1*	*162*	*2*	*13*	*178*
West Fort	03-AM Gray	0	10	0	0	10
Subtotal		***2***	***370***	***7***	***21***	***400***
Unidentified Types						
	Indet Black	0	45	0	0	45
	Indet Dk Brown	0	306	2	0	308
	Indet Dk Gray	0	201	5	1	207
	Indet Lt Brown	1	1237	7	13	1258
	Indet Lt Gray	0	360	0	2	362
	Indet Misc.	0	314	2	0	316
	Indet Mottled	2	51	1	4	58
	Indet Trans	0	7	0	0	7
	Indet White	0	188	0	1	189
	Subtotal	*3*	*2709*	*17*	*21*	*2750*
Total		**5**	**3079**	**24**	**42**	**3150**

Table G-11 Count of Lithic Debitage by Chert Province and Chert Type for Sites within the Cowhouse/Taylor/Bear Site Group.

		Site												
Chert Province	Lithic Material	BL0233	BL0504	BL0513	BL0531	BL0532	BL0538	BL0560	BL0564	BL0567	BL0568	BL0598	BL0608	Total
Identified Types														
Cowhouse	18-C Mottled	0	0	0	0	0	0	0	0	2	0	0	0	2
	19-C Dr Gray	0	0	0	0	1	0	0	0	0	0	0	0	1
	22-C Mott/Flecks	0	0	0	0	0	0	0	0	0	0	0	0	0
	23-C Mott/Banded	0	0	0	0	1	0	0	0	0	0	0	0	1
	Subtotal	*0*	*0*	*0*	*0*	*2*	*0*	*0*	*0*	*2*	*0*	*0*	*0*	*4*
North Fort	08-FH Yellow	6	24	4	1	0	0	8	0	12	5	11	0	71
	11-ER Flat	0	0	0	0	0	0	1	0	0	0	0	0	1
	14-FH Gray	0	0	0	0	0	1	5	0	5	0	2	0	13
	15-Gry/Brn/Grn	0	10	1	2	0	0	4	0	11	2	2	0	32
	17-Owl Crk Black	4	0	10	2	38	0	6	0	8	6	3	0	77
	Subtotal	*10*	*34*	*15*	*5*	*38*	*1*	*24*	*0*	*36*	*13*	*18*	*0*	*194*
Southeast Range	01-HL Blue(l)	0	0	0	0	0	0	5	0	2	0	0	0	7
	02-C White	0	0	0	0	0	0	17	0	0	2	0	0	19
	05-Texas Novac	0	0	0	0	0	0	0	0	1	0	0	0	1
	06-HL Tan	2	12	3	2	20	0	0	0	18	12	11	2	82
	07-Foss Pale Brown	0	2	0	0	0	0	0	1	0	0	0	0	3
	09-HL Tr Brown	0	0	0	6	18	0	0	0	0	0	0	0	24
	10-HL Blue	0	2	0	8	0	0	4	1	8	2	0	0	25
	13-ER Flecked	0	0	0	0	0	0	0	0	1	0	0	0	1
	Subtotal	*2*	*16*	*3*	*16*	*38*	*0*	*26*	*2*	*30*	*16*	*11*	*2*	*162*
West Fort	03-AM Gray	0	2	0	0	0	0	1	0	1	5	1	0	10
Subtotal		*12*	*52*	*18*	*21*	*78*	*1*	*51*	*2*	*69*	*34*	*30*	*2*	*370*
Unidentified Types														
	Indet Black	7	12	0	3	1	0	1	0	15	2	4	0	45
	Indet Dk Brown	32	24	6	16	39	0	9	2	147	3	27	1	306
	Indet Dk Gray	60	8	6	9	4	0	30	0	9	9	46	20	201
	Indet Lt Brown	64	67	43	27	143	3	85	9	654	34	56	52	1237
	Indet Lt Gray	43	46	7	1	21	0	32	5	104	10	51	40	360
	Indet Misc.	12	230	2	1	22	0	20	0	1	14	10	2	314
	Indet Mottled	2	15	2	3	1	0	13	0	10	0	4	1	51
	Indet Trans	0	0	0	4	0	0	2	0	0	0	1	0	7
	Indet White	38	20	3	3	20	0	24	0	22	15	25	18	188
	Subtotal	*258*	*422*	*69*	*67*	*251*	*3*	*216*	*16*	*962*	*87*	*224*	*134*	*2709*
Total		**270**	**472**	**87**	**88**	**329**	**4**	**266**	**18**	**1030**	**116**	**253**	**136**	**3079**

Table G-12 Percentage of Lithic Debitage Characteristics by Chert Type for Cowhouse/Taylor/Bear Site Group.

		Total Debitage			Small Debitage (<0.9 cm)		Large Debitage (>1.8 cm)		Medium Debitage 0.9 to 1.8 cm
Lithic Material	N	decorticate	partial cortex	all cortex	Total	decorticate	Total	decorticate	Total
HL Blue (1&10)	32	84%	13%	0%	3%	100%	31%	80%	66%
02-C White	19	58%	42%	0%	5%	100%	58%	55%	37%
03-AM Gray	10	90%	10%	0%	10%	100%	60%	83%	30%
05-Texas Novac	1	100%	0%	0%	0%	0%	0%	0%	100%
06-HL Tan	82	80%	20%	0%	10%	100%	46%	66%	44%
07-Foss Pale Brown	3	67%	33%	0%	0%	0%	100%	67%	0%
08-FH Yellow	71	77%	23%	0%	8%	83%	24%	59%	68%
09-HL Tr Brown	24	83%	13%	0%	0%	0%	33%	50%	67%
11-ER Flat	1	100%	0%	0%	100%	100%	0%	0%	0%
13-ER Flecked	1	100%	0%	0%	100%	100%	0%	0%	0%
14-FH Gray	13	92%	8%	0%	8%	100%	38%	100%	54%
15-Gry/Brn/Grn	32	66%	34%	0%	6%	100%	44%	64%	50%
17-Owl Crk Black	77	82%	18%	0%	34%	85%	14%	64%	52%
18-C Mottled	2	100%	0%	0%	100%	100%	0%	0%	0%
19-C Dr Gray	1	100%	0%	0%	0%	0%	0%	0%	100%
23-C Mott/Banded	1	0%	100%	0%	0%	0%	100%	0%	0%
Indet Black	45	91%	9%	0%	62%	100%	4%	2%	33%
Indet Dk Brown	306	93%	6%	0%	22%	94%	7%	6%	37%
Indet Dk Gray	201	94%	5%	0%	44%	97%	6%	4%	47%
Indet Lt Brown	1237	88%	12%	0%	58%	93%	9%	6%	33%
Indet Lt Gray	360	94%	6%	0%	48%	97%	7%	77%	45%
Indet Misc.	314	89%	11%	1%	48%	99%	3%	56%	49%
Indet Mottled	51	14%	0%	0%	2%	100%	0%	0%	12%
Indet Trans	7	100%	0%	0%	14%	100%	0%	0%	86%
Indet White	188	91%	8%	0%	26%	100%	14%	78%	60%

Table G-13 Count of Lithic Class by Chert Province and Chert Type for Owl Creek Site Group.

Chert Province	Material	Class				
		Core	Debitage	Point	Tool	Total
Identified Types						
Cowhouse	18-C Mottled	0	18	1	2	21
	19-C Dr Gray	0	27	0	3	30
	22-C Mott/Flecks	0	12	0	6	18
	26-C Striated	0	1	0	0	1
	Subtotal	*0*	*58*	*1*	*11*	*70*
North Fort	08-FH Yellow	6	1499	4	81	1590
	11-ER Flat	0	2	0	2	4
	14-FH Gray	0	241	1	22	264
	15-Gry/Brn/Grn	3	4567	7	118	4695
	16-Leona Park	0	0	0	2	2
	17-Owl Crk Black	1	2312	13	24	2350
	Subtotal	*10*	*8621*	*25*	*249*	*8905*
Southeast Range	01-HL Blue(l)	0	7	0	1	8
	02-C White	0	6	1	0	7
	05-Texas Novac	0	4	0	1	5
	06-HL Tan	3	590	14	54	661
	07-Foss Pale Brown	0	3	0	5	8
	09-HL Tt Brown	0	27	1	2	30
	13-ER Flecked	0	3	0	2	5
	Subtotal	*3*	*640*	*16*	*65*	*724*
West Fort	03-AM Gray	0	2	0	2	4
	04-7 Mile Novac	0	5	0	0	5
	Subtotal	*0*	*7*	*0*	*2*	*9*
Subtotal		***13***	***9326***	***42***	***327***	***9708***
Unidentified Types						
	Indet Black	0	130	0	0	130
	Indet Dk Brown	0	475	5	15	495
	Indet Dk Gray	0	1798	4	7	1809
	Indet Lt Brown	0	2051	10	38	2099
	Indet Lt Gray	0	1263	4	17	1284
	Indet Misc.	0	5042	6	27	5075
	Indet Mottled	0	308	0	25	333
	Indet Trans	0	25	0	0	25
	Indet White	0	178	1	2	181
	Subtotal	*0*	*11270*	*30*	*131*	*11431*
Total		**13**	**20596**	**72**	**458**	**21139**

Table G-14 Count of Lithic Debitage by Chert Province and Chert Type for Sites within the Owl Creek Site Group.

Chert Province	Lithic Material	CV0044	CV0045	CV0046	CV0047	CV0048	CV0378	CV0379	CV0380	CV0900	Total
Identified Types											
Cowhouse	18-C Mottled	4	0	1	2	4	0	7	0	0	18
	19-C Dr Gray	24	0	1	1	0	0	0	1	0	27
	22-C Mott/Flecks	1	0	7	0	1	0	3	0	0	12
	26-C Striated	0	0	0	0	1	0	0	0	0	1
	Subtotal	*29*	*0*	*9*	*3*	*6*	*0*	*10*	*1*	*0*	*58*
North Fort	08-FH Yellow	325	14	450	90	528	5	56	26	5	1499
	11-ER Flat	0	0	2	0	0	0	0	0	0	2
	14-FH Gray	37	0	67	4	111	6	10	6	0	241
	15-Gry/Brn/Grn	91	1	608	57	3596	5	200	8	1	4567
	16-Leona Park	0	0	0	0	0	0	0	0	0	0
	17-Owl Crk Black	332	25	207	29	1693	6	15	5	0	2312
	Subtotal	*785*	*40*	*1334*	*180*	*5928*	*22*	*281*	*45*	*6*	*8621*
Southeast Range	HL Blue (1&10)	3	0	3	0	0	0	1	0	0	7
	02-C White	0	0	2	2	0	0	1	0	1	6
	05-Texas Novac	1	0	0	0	3	0	0	0	0	4
	06-HL Tar.	159	3	95	20	262	7	36	2	6	590
	07-Foss Pale Brown	0	0	0	0	1	0	2	0	0	3
	09-HL Tr Brown	0	0	1	0	22	0	4	0	0	27
	13-ER Flecked	1	0	0	1	0	1	0	0	0	3
	Subtotal	*164*	*3*	*101*	*23*	*288*	*8*	*44*	*2*	*7*	*640*
West Fort	03-AM Gray	0	0	0	0	0	1	1	0	0	2
	04-7 Mile Novac	0	0	4	0	1	0	0	0	0	5
	Subtotal	*0*	*0*	*4*	*0*	*1*	*1*	*1*	*0*	*0*	*7*
Subtotal		***978***	***43***	***1448***	***206***	***6223***	***31***	***336***	***48***	***13***	***9326***
Unidentified Types											
	Indet Black	8	9	2	12	23	0	26	50	0	130
	Indet Dk Brown	25	6	35	115	201	4	74	15	0	475
	Indet Dk Gray	303	21	127	247	497	7	100	496	0	1798
	Indet Lt Brown	221	52	141	313	831	30	183	262	18	2051
	Indet Lt Gray	126	8	65	70	613	8	70	302	1	1263
	Indet Misc.	373	6	508	175	3137	7	247	589	0	5042
	Indet Mottled	7	23	8	7	47	12	171	22	11	308
	Indet Trans	0	0	0	4	6	0	14	1	0	25
	Indet White	12	7	25	10	29	7	29	53	6	178
	Subtotal	*1075*	*132*	*911*	*953*	*5384*	*75*	*914*	*1790*	*36*	*11270*
Other	Quartz	0	0	0	0	1	0	0	0	0	1
Total		**2053**	**175**	**2359**	**1159**	**11608**	**106**	**1250**	**1838**	**49**	**20597**

Table G-15 Percentage of Lithic Debitage Characteristics by Chert Type for Owl Creek Site Group.

		Total Debitage			Small Debitage (<0.9 cm)		Large Debitage (>1.8 cm)		Medium Debitage 0.9 to 1.8 cm
Lithic Material	N	decorticate	partial cortex	all cortex	Total	decorticate	Total	decorticate	Total
HL Blue (1&10)	7	43%	57%	0%	29%	0%	0%	0%	71%
02-C White	6	67%	33%	0%	0%	0%	67%	100%	33%
03-AM Gray	2	0%	100%	0%	0%	0%	50%	0%	50%
04-7 Mile Novac	5	0%	100%	0%	80%	0%	20%	0%	0%
05-Texas Novac	4	75%	25%	0%	0%	0%	75%	67%	25%
06-HL Tan	590	78%	22%	0%	25%	100%	29%	46%	47%
07-Foss Pale Brown	3	0%	100%	0%	0%	0%	100%	0%	0%
08-FH Yellow	1449	85%	18%	0%	42%	98%	20%	50%	41%
09-HL Tr Brown	27	89%	11%	0%	0%	0%	33%	78%	67%
11-ER Flat	2	100%	0%	0%	0%	0%	50%	100%	50%
13-ER Flecked	3	33%	67%	0%	0%	0%	67%	50%	33%
14-FH Gray	241	86%	14%	0%	15%	100%	30%	71%	55%
15-Gry/Brn/Grn	4567	86%	14%	0%	33%	94%	15%	64%	53%
17-Owl Crk Black	2312	93%	6%	0%	62%	98%	4%	59%	34%
18-C Mottled	18	44%	56%	0%	0%	0%	89%	44%	11%
19-C Dr Gray	27	93%	7%	0%	89%	100%	7%	0%	4%
22-C Mott/Flecks	12	33%	67%	0%	0%	0%	92%	33%	8%
26-C Striated	1	100%	0%	0%	0%	0%	100%	0%	0%
Indet Black	130	86%	14%	0%	55%	90%	5%	2%	41%
Indet Dk Brown	475	89%	11%	0%	50%	100%	7%	3%	42%
Indet Dk Gray	1798	96%	4%	0%	72%	99%	1%	1%	27%
Indet Lt Brown	2051	84%	16%	0%	53%	92%	7%	53%	39%
Indet Lt Gray	1263	96%	4%	0%	54%	100%	6%	73%	40%
Indet Misc.	5042	86%	13%	0%	59%	93%	4%	66%	37%
Indet Mottled	308	52%	47%	0%	4%	67%	43%	30%	53%
Indet Trans	25	80%	16%	0%	0%	0%	24%	83%	76%
Indet White	178	9%	1%	0%	3%	97%	1%	67%	6%

Table G-16 Count of Lithic Class by Chert Province and Chert Type for East Henson Site Group.

		Class				
Chert Province	Material	Core	Debitage	Point	Tool	Total
Identified Types						
Cowhouse	18-C Mottled	0	1	0	0	1
	22-C Mott/Flecks	0	5	0	0	5
	28-Table Rock Flat	0	1	0	0	1
	Subtotal	*0*	*7*	*0*	*0*	*7*
North Fort	08-FH Yellow	0	244	0	4	248
	14-FH Gray	1	46	0	3	50
	15-Gry/Brn/Grn	0	87	2	0	89
	17-Owl Crk Black	0	16	1	0	17
	Subtotal	*1*	*393*	*3*	*7*	*404*
Southeast Range	02-C White	0	0	1	0	1
	06-HL Tan	1	33	2	2	38
	07-Foss Pale Brown	0	1	0	0	1
	09-HL Tr Brown	0	2	0	0	2
	13-ER Flecked	0	0	0	1	1
	Subtotal	*1*	*36*	*3*	*3*	*43*
Subtotal		***2***	***436***	***6***	***10***	***454***
Unidentified Types						
	Indet Black	0	2	0	0	2
	Indet Dk Brown	0	7	0	0	7
	Indet Dk Gray	0	43	0	0	43
	Indet Lt Brown	0	77	0	2	79
	Indet Lt Gray	0	25	1	0	26
	Indet Misc.	0	103	0	2	105
	Indet Mottled	0	41	0	0	41
	Indet White	0	12	0	0	12
	Subtotal	*0*	*310*	*1*	*4*	*315*
Total		**2**	**746**	**7**	**14**	**769**

Table G-17 Count of Lithic Debitage by Chert Province and Chert Type for Sites within the East Henson Site Group.

Chert Province	Lithic Material	Site CV0184	CV0271	CV0849	Total
Identified Types					
Cowhouse	18-C Mottled	1	0	0	1
	22-C Mott/Flecks	5	0	0	5
	28-Table Rock Flat	1	0	0	1
	Subtotal	*7*	*0*	*0*	*7*
North Fort	08-FH Yellow	237	6	1	244
	14-FH Gray	42	3	1	46
	15-Gry/Brn/Grn	75	12	0	87
	17-Owl Crk Black	16	0	0	16
	Subtotal	*370*	*21*	*2*	*393*
Southeast Range	02-C White	0	0	0	0
	06-HL Tan	31	2	0	33
	07-Foss Pale Brown	1	0	0	1
	09-HL Tr Brown	1	0	1	2
	13-ER Flecked	0	0	0	0
	Subtotal	*33*	*2*	*1*	*36*
Subtotal		***410***	***23***	***3***	***436***
Unidentified Types					
	Indet Black	2	0	0	2
	Indet Dk Brown	7	0	0	7
	Indet Dk Gray	43	0	0	43
	Indet Lt Brown	71	6	0	77
	Indet Lt Gray	23	2	0	25
	Indet Misc.	102	1	0	103
	Indet Mottled	34	6	1	41
	Indet White	11	1	0	12
	Subtotal	*293*	*16*	*1*	*310*
Total		**703**	**39**	**4**	**746**

Table G-18 Percentage of Lithic Debitage Characteristics by Chert Type for East Henson Site Group.

		Total Debitage			Small Debitage (<0.9 cm)		Large Debitage (>1.8 cm)		Medium Debitage 0.9 to 1.8 cm
Lithic Material	N	decorticate	partial cortex	all cortex	Total	decorticate	Total	decorticate	Total
06-HL Tan	33	73%	27%	0%	0%	0%	36%	33%	64%
07-Foss Pale Brown	1	0%	100%	0%	0%	0%	100%	0%	0%
08-FH Yellow	244	78%	22%	0%	1%	100%	42%	61%	57%
09-HL Tr Brown	2	100%	0%	0%	0%	0%	50%	100%	50%
14-FH Gray	46	61%	39%	0%	13%	100%	28%	31%	59%
15-Gry/Brn/Grn	87	68%	32%	0%	0%	0%	45%	51%	55%
17-Owl Crk Black	16	69%	31%	0%	0%	0%	6%	100%	94%
18-C Mottled	1	100%	0%	0%	0%	0%	0%	0%	100%
22-C Mott/Flecks	5	20%	80%	0%	0%	0%	100%	20%	0%
28-Table Rock Flat	1	0%	100%	0%	0%	0%	100%	0%	0%
Indet Black	2	100%	0%	0%	50%	100%	0%	0%	50%
Indet Dk Brown	7	57%	43%	0%	14%	100%	29%	0%	57%
Indet Dk Gray	43	86%	14%	0%	30%	100%	0%	0%	70%
Indet Lt Brown	77	79%	21%	0%	14%	100%	18%	29%	68%
Indet Lt Gray	25	84%	16%	0%	20%	100%	12%	67%	68%
Indet Misc.	103	85%	15%	0%	9%	100%	21%	82%	70%
Indet Mottled	41	5%	95%	0%	0%	0%	44%	6%	56%
Indet White	12	92%	8%	0%	0%	0%	25%	67%	75%

Table G-19 Count of Lithic Class by Chert Province and Chert Type for Shoal/Turnover Site Group.

		Class				
Chert Province	Material	Core	Debitage	Point	Tool	Total
Identified Types						
Cowhouse	18-C Mottled	0	1	0	0	1
	19-C Dr Gray	0	2	0	0	2
	22-C Mott/Flecks	1	2	0	0	3
	28-Table Rock Flat	0	2	0	0	2
	Subtotal	*1*	*7*	*0*	*0*	*8*
North Fort	08-FH Yellow	2	1921	3	11	1937
	14-FH Gray	0	57	1	1	59
	15-Gry/Brn/Grn	0	171	2	5	178
	17-Owl Crk Black	0	25	1	0	26
	Subtotal	*2*	*2174*	*7*	*17*	*2200*
Southeast Range	02-C White	0	1	0	0	1
	06-HL Tan	1	108	3	12	124
	07-Foss Pale Brown	0	0	0	1	1
	09-HL Tr Brown	0	2	0	1	3
	10-HL Blue	0	2	0	0	2
	Subtotal	1	113	3	14	131
West Fort	03-AM Gray	0	1	0	0	1
Subtotal		***4***	***2295***	***10***	***31***	***2340***
Unidentified Types						
	Indet Black	0	8	0	0	8
	Indet Dk Brown	0	253	0	4	257
	Indet Dk Gray	0	601	0	0	601
	Indet Lt Brown	1	1223	3	11	1238
	Indet Lt Gray	0	165	2	1	[illegible]
	Indet Misc.	1	[illegible]	[illegible]	5	708
	Indet Mottled	0	55	0	7	62
	Indet Trans	0	28	0	0	28
	Indet White	0	29	0	1	30
	Subtotal	*2*	*3062*	*6*	*30*	*3100*
Total		**6**	**5357**	**16**	**61**	**5440**

Table G-20 Count of Lithic Debitage by Chert Province and Chert Type for Sites Within the Shoal/Turnover Site Group.

Chert Province	Lithic Material	Site CV0115	CV0201	CV0332	CV0397	CV0905	CV1471	CV1472	Total
Identified Types									
Cowhouse	18-C Mottled	1	0	0	0	0	0	0	1
	19-C Dr Gray	2	0	0	0	0	0	0	2
	22-C Mott/Flecks	1	0	0	0	1	0	0	2
	28-Table Rock Flat	2	0	0	0	0	0	0	2
	Subtotal	*6*	*0*	*0*	*0*	*1*	*0*	*0*	*7*
North Fort	08-FH Yellow	1253	1	3	0	283	12	369	1921
	14-FH Gray	17	0	0	0	5	2	33	57
	15-Gry/Brn/Grn	45	0	0	9	35	6	76	171
	17-Owl Crk Black	3	0	0	0	3	1	18	25
	Subtotal	*1318*	*1*	*3*	*9*	*326*	*21*	*496*	*2174*
Southeast Range	02-C White	1	0	0	0	0	0	0	1
	06-HL Tan	19	0	0	7	49	0	33	108
	07-Foss Pale Brown	0	0	0	0	0	0	0	0
	09-HL Tr Brown	0	0	0	0	2	0	0	2
	10-HL Blue	1	0	0	0	0	0	1	2
	Subtotal	*21*	*0*	*0*	*7*	*51*	*0*	*34*	*113*
West Fort	03-AM Gray	0	0	0	0	1	0	0	1
Subtotal		***1345***	***1***	***3***	***16***	***379***	***21***	***530***	***2295***
Unidentified Types									
	Indet Black	6	0	0	0	0	0	2	8
	Indet Dk Brown	170	0	2	4	6	3	68	253
	Indet Dk Gray	548	0	2	0	7	1	43	601
	Indet Lt Brown	844	1	34	16	144	33	151	1223
	Indet Lt Gray	69	0	3	0	44	2	47	165
	Indet Misc.	488	0	0	0	169	6	37	700
	Indet Mottled	13	1	8	0	5	6	22	55
	Indet Trans	2	0	0	0	2	8	16	28
	Indet White	8	0	5	0	6	2	8	29
	Subtotal	*2148*	*2*	*54*	*20*	*383*	*61*	*394*	*3062*
Other	Limestone	2	0	0	0	0	0	0	2
Total		**3495**	**3**	**57**	**36**	**762**	**82**	**924**	**5359**

Table G-21 Percentage of Lithic Debitage Characteristics by Chert Type for Shoal/Turnover Site Group.

		Total Debitage			Small Debitage (<0.9 cm)		Large Debitage (>1.8 cm)		Medium Debitage 0.9 to 1.8 cm
Lithic Material	N	decorticate	partial cortex	all cortex	Total	decorticate	Total	decorticate	Total
02-C White	1	0%	100%	0%	100%	0%	0%	0%	0%
03-AM Gray	1	100%	0%	0%	0%	0%	100%	100%	0%
06-HL Tan	108	58%	41%	0%	7%	100%	53%	44%	40%
08-FH Yellow	1921	74%	26%	0%	15%	98%	40%	57%	45%
09-HL Tr Brown	2	50%	50%	0%	0%	0%	50%	0%	50%
10-HL Blue	2	100%	0%	0%	0%	0%	100%	100%	0%
14-FH Gray	57	89%	11%	0%	0%	0%	53%	80%	47%
15-Gry/Brn/Grn	171	58%	40%	2%	1%	0%	63%	44%	37%
17-Owl Crk Black	25	92%	8%	0%	16%	100%	24%	83%	60%
18-C Mottled	1	100%	0%	0%	0%	0%	100%	100%	0%
19-C Dr Gray	2	100%	0%	0%	0%	0%	0%	0%	100%
22-C Mott/Flecks	2	0%	100%	0%	0%	0%	100%	0%	0%
28-Table Rock Flat	2	0%	100%	0%	0%	0%	100%	0%	0%
Indet Black	8	38%	63%	0%	0%	0%	0%	0%	100%
Indet Dk Brown	253	75%	24%	2%	13%	100%	25%	15%	62%
Indet Dk Gray	601	88%	11%	0%	68%	94%	9%	5%	23%
Indet Lt Brown	1223	75%	25%	0%	44%	85%	14%	39%	42%
Indet Lt Gray	165	58%	41%	1%	18%	100%	27%	29%	55%
Indet Misc.	700	62%	26%	1%	36%	70%	15%	54%	50%
Indet Mottled	55	40%	60%	0%	4%	50%	49%	33%	47%
Indet Trans	28	82%	18%	0%	7%	100%	14%	75%	79%
Indet White	29	72%	28%	0%	0%	0%	28%	63%	72%

Table G-22 Count of Lithic Class by Chert Province and Chert Type for Shell Mountain Site Group.

		Class				
Chert Province	Material	Core	Debitage	Point	Tool	Total
Identified Types						
Cowhouse	18-C Mottled	2	143	0	12	157
	19-C Dr Gray	1	124	1	8	134
	21-C Lgt Gray	0	2	0	0	2
	22-C Mott/Flecks	0	65	0	16	81
	23-C Mott/Banded	1	12	0	0	13
	25-C Br Fleck	0	1	0	1	2
	26-C Striated	0	4	0	0	4
	27-C Novaculite	0	5	0	0	5
	28-Table Rock Flat	0	5	0	0	5
	Subtotal	*4*	*361*	*1*	*37*	*403*
North Fort	08-FH Yellow	1	2541	19	29	2590
	11-ER Flat	0	38	1	3	42
	14-FH Gray	1	120	4	9	134
	15-Gry/Brn/Grn	0	255	4	11	270
	16-Leona Park	0	1	0	0	1
	17-Owl Crk Black	0	555	8	12	575
	Subtotal	2	3510	36	64	3612
Southeast Range	HL Blue (1&10)	0	36	0	2	38
	02-C White	0	96	0	7	103
	06-HL Tan	4	925	30	110	1069
	07-Foss Pale Brown	1	99	0	7	107
	09-HL Tr Brown	0	35	8	4	47
	13-ER Flecked	0	82	2	2	86
	Subtotal	*5*	*1273*	*40*	*132*	*1450*
West Fort	03-AM Gray	0	87	2	8	97
Subtotal		***11***	***5231***	***79***	***241***	***5562***
Unidentified Types						
	Indet Black	0	405	4	1	410
	Indet Dk Brown	1	2053	13	33	2100
	Indet Dk Gray	0	2188	15	22	2225
	Indet Lt Brown	3	7280	32	73	7388
	Indet Lt Gray	0	1581	9	18	1608
	Indet Misc.	0	2207	15	16	2238
	Indet Mottled	2	652	4	15	673
	Indet Trans	0	96	2	1	99
	Indet White	1	862	3	12	878
	Subtotal	*7*	*17324*	*97*	*191*	*17619*
Total		**18**	**22555**	**176**	**432**	**23181**

Table G-23 Count of Lithic Debitage by Chert Province and Chert Type for Sites within the Shell Mountain Site Group.

Chert Province	Lithic Material	CV0071	CV0124	CV0125	CV0137	CV0240	CV0403	CV0431	CV0484	CV0493	CV0495	CV0587	CV0913	CV0918	CV0927	CV0935	CV0936	CV1007	CV1008	CV1011	CV1080	CV1085	CV1165	CV1166	CV1167	Total
Identified Types																										
Cowhouse	18-C Mottled	0	0	0	49	1	45	1	0	0	0	1	0	0	0	0	0	13	4	1	19	4	0	0	5	143
	19-C Dr Gray	0	0	0	22	0	63	0	0	0	0	25	0	0	0	0	0	0	0	2	3	0	0	1	8	124
	21-C Lgt Gray	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
	22-C Mott/Flecks	0	0	0	9	0	42	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	12	0	[illegible]
	23-C Mott/Banded	0	0	0	10	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	12
	25-C Br Fleck	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	26-C Striated	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
	27-C Novaculite	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	5
	28-Table Rock Flat	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	5
	Subtotal	*0*	*0*	*8*	*92*	*1*	*153*	*2*	*0*	*0*	*0*	*27*	*0*	*0*	*0*	*1*	*0*	*14*	*4*	*3*	*23*	*6*	*0*	*13*	*14*	*361*
North Fort	08-FH Yellow	0	30	19	1120	7	209	23	0	0	1	244	0	1	1	30	43	441	11	53	31	165	0	3	109	2541
	11-ER Flat	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	29	0	0	0	0	0	0	38
	14-FH Gray	0	0	4	11	0	27	6	0	0	1	11	0	1	0	0	5	21	11	16	1	0	0	1	4	120
	15-Gry/Brn/Grn	0	0	11	2	0	148	24	0	0	0	16	0	2	0	12	2	6	11	11	3	4	0	0	3	255
	16-Leona Park	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
	17-Owl Crk Black	0	1	0	258	0	158	4	0	0	0	11	0	0	0	1	0	36	66	13	2	0	0	2	3	555
	Subtotal	*0*	*31*	*34*	*1391*	*7*	*551*	*57*	*0*	*0*	*2*	*282*	*0*	*4*	*1*	*43*	*50*	*505*	*128*	*93*	*37*	*169*	*0*	*6*	*119*	*3310*
Southeast Range	HL Blue (1&10)	0	0	0	1	0	1	2	0	0	0	7	0	1	0	5	5	2	1	11	0	0	0	0	0	36
	02-C White	0	2	19	5	0	24	6	0	0	0	0	0	0	0	0	2	3	9	16	8	1	0	0	1	96
	06-HL Tan	0	12	5	32[illegible]	0	247	14	0	0	1	15	1	9	0	22	20	89	29	111	11	2	1	8	3	925
	07-Foss Pale Brown	0	1	4	8	0	49	0	0	0	0	8	0	0	0	0	1	4	1	19	0	0	0	0	4	99
	09-HL Tr Brown	0	0	0	9	0	3	2	0	0	0	5	0	0	0	0	3	2	1	8	0	1	0	0	1	35
	13-ER Flecked	0	0	1	3	0	36	0	0	0	0	7	0	0	0	0	0	17	8	9	0	1	0	0	0	82
	Subtotal	*0*	*15*	*29*	*351*	*0*	*360*	*24*	*0*	*0*	*1*	*42*	*1*	*10*	*0*	*27*	*31*	*117*	*49*	*174*	*19*	*5*	*1*	*8*	*9*	*1273*
West Fort	03-AM Gray	0	0	0	14	0	12	3	0	0	0	11	0	0	0	0	3	15	7	13	7	1	0	0	1	87
Subtotal		***0***	***46***	***71***	***1848***	***8***	***1076***	***86***	***0***	***0***	***3***	***362***	***1***	***14***	***1***	***71***	***84***	***651***	***188***	***283***	***86***	***181***	***1***	***27***	***143***	***5231***
Unidentified Types																										
	Indet Black	0	2	0	178	0	117	3	0	0	6	18	0	0	0	11	0	27	24	12	0	0	0	1	6	405
	Indet Dk Brown	0	21	5	492	3	253	19	0	0	0	220	0	1	0	25	15	397	61	415	6	17	3	31	69	2052
	Indet Dk Gray	0	42	11	331	2	886	53	0	0	16	22	0	1	0	189	57	152	83	138	61	6	2	66	10	2188
	Indet Lt Brown	3	193	145	629	37	1031	279	0	0	56	1635	0	3	2	274	89	413	275	1274	343	113	7	93	386	7280
	Indet Lt Gray	0	42	36	337	6	408	48	0	0	9	180	0	0	1	17	18	171	11	181	27	25	2	10	52	1581
	Indet Misc.	0	48	117	372	0	178	71	0	0	4	3	0	11	0	631	57	158	163	123	95	105	4	65	2	2207
	Indet Mottled	0	5	83	53	9	183	115	0	0	2	1	0	2	0	63	16	22	14	10	37	6	1	30	0	652
	Indet Trans	0	1	0	41	0	27	6	0	0	0	2	0	0	0	2	1	10	0	1	1	2	0	2	0	96
	Indet White	0	149	13	89	8	140	104	1	1	5	67	0	1	0	21	37	30	45	61	62	3	0	15	10	862
	Subtotal	*3*	*503*	*410*	*2522*	*65*	*3223*	*698*	*1*	*1*	*98*	*2148*	*0*	*19*	*3*	*1233*	*290*	*1380*	*676*	*2275*	*632*	*277*	*19*	*313*	*535*	*17324*
Total		**3**	**549**	**481**	**4356**	**73**	**4287**	**781**	**1**	**1**	**101**	**2499**	**1**	**33**	**4**	**1304**	**371**	**2016**	**857**	**2545**	**711**	**457**	**20**	**340**	**677**	**22555**

Table G-24 Percentage of Lithic Debitage Characteristics by Chert Type for Shell Mountain Site Group.

		Total Debitage			Small Debitage (<0.9 cm)		Large Debitage (>1.8 cm)		Medium Debitage 0.9 to 1.8 cm
Lithic Material	N	decorticate	partial cortex	all cortex	Total	decorticate	Total	decorticate	Total
HL Blue (1&10)	36	92%	8%	0%	17%	83%	31%	82%	53%
02-C White	96	83%	16%	0%	16%	100%	46%	64%	39%
03-AM Gray	87	92%	8%	0%	15%	100%	31%	81%	54%
06-HL Tan	925	90%	9%	0%	22%	100%	24%	73%	54%
07-Foss Pale Brown	99	72%	26%	1%	7%	100%	44%	41%	48%
08-FH Yellow	2541	93%	7%	0%	42%	97%	11%	74%	47%
09-HL Tr Brown	35	71%	29%	0%	0%	0%	23%	25%	77%
11-ER Flat	38	100%	0%	0%	34%	100%	11%	100%	55%
13-ER Flecked	82	95%	5%	0%	38%	100%	16%	100%	46%
14-FH Gray	120	92%	8%	0%	8%	100%	29%	83%	63%
15-Gry/Brn/Grn	255	83%	17%	0%	7%	100%	35%	73%	59%
16-Leona Park	1	100%	0%	0%	0%	0%	0%	0%	100%
17-Owl Crk Black	555	95%	5%	0%	44%	99%	7%	85%	49%
18-C Mottled	143	82%	18%	0%	10%	100%	46%	65%	43%
19-C Dr Gray	124	77%	23%	0%	13%	100%	27%	62%	60%
21-C Lgt Gray	2	50%	50%	0%	0%	0%	100%	50%	0%
22-C Mott/Flecks	65	75%	25%	0%	17%	100%	58%	35%	25%
23-C Mott/Banded	12	75%	25%	0%	0%	0%	58%	42%	42%
25-C Br Fleck	1	100%	0%	0%	0%	0%	100%	100%	0%
26-C Striated	4	25%	75%	0%	0%	0%	100%	25%	0%
27-C Novaculite	5	80%	20%	0%	0%	0%	100%	80%	0%
28-Table Rock Flat	5	20%	80%	0%	0%	0%	80%	0%	20%
Indet Black	405	96%	4%	0%	67%	99%	2%	2%	31%
Indet Dk Brown	2053	97%	3%	0%	67%	99%	4%	3%	29%
Indet Dk Gray	2188	93%	7%	0%	54%	96%	4%	2%	43%
Indet Lt Brown	7280	89%	10%	0%	53%	98%	8%	60%	38%
Indet Lt Gray	1581	89%	11%	0%	48%	98%	10%	57%	42%
Indet Misc.	2207	79%	16%	0%	46%	86%	7%	64%	46%
Indet Mottled	652	40%	59%	0%	11%	62%	46%	36%	43%
Indet Trans	96	86%	14%	0%	23%	100%	6%	83%	71%
Indet White	862	87%	11%	0%	36%	99%	16%	62%	48%

Table G-25 Count of Lithic Class by Chert Province and Chert Type for Stampede Site Group.

Chert Province	Material	Debitage	Point	Tool	Total
Identified Types					
Cowhouse	18-C Mottled	3	0	1	4
	22-C Mott/Flecks	7	0	0	7
	23-C Mott/Banded	3	0	0	3
	27-C Novaculite	3	0	0	3
	Subtotal	*16*	*0*	*1*	*17*
North Fort	08-FH Yellow	58	0	0	58
	14-FH Gray	8	1	3	12
	15-Gry/Brn/Grn	1	1	1	3
	17-Owl Crk Black	14	0	0	14
	Subtotal	*81*	*2*	*4*	*87*
Southeast Range	02-C White	7	0	2	9
	06-HL Tan	25	5	0	30
	07-Foss Pale Brown	2	0	1	3
	09-HL Tr Brown	7	1	0	8
	10-HL Blue	1	0	0	1
	Subtotal	*42*	*6*	*3*	*51*
West Fort	03-AM Gray	3	0	1	4
	04-7 Mile Novac	1	0	0	1
	Subtotal	*4*	*0*	*1*	*5*
Subtotal		***143***	***8***	***9***	***160***
Unidentified Types					
	Indet Black	9	0	1	10
	Indet Dk Brown	46	1	0	47
	Indet Dk Gray	77	0	0	77
	Indet Lt Brown	344	3	4	351
	Indet Lt Gray	31	1	1	33
	Indet Misc.	52	0	2	54
	Indet Mottled	9	0	1	10
	Indet Trans	10	0	0	10
	Indet White	86	4	3	93
	Subtotal	*664*	*9*	*12*	*685*
Total		**807**	**17**	**21**	**845**

Table G-26 Count of Lithic Debitage by Chert Province and Chert Type for Sites within the Stampede Site Group.

		Site				
Chert Province	Lithic Material	CV0478	CV0595	CV1023	CV1027	Total
Identified Types						
Cowhouse	18-C Mottled	0	3	0	0	3
	22-C Mott/Flecks	1	6	0	0	7
	23-C Mott/Banded	0	3	0	0	3
	27-C Novaculite	0	3	0	0	3
	Subtotal	*1*	*15*	*0*	*0*	*16*
North Fort	08-FH Yellow	2	45	11	0	58
	14-FH Gray	1	7	0	0	8
	15-Gry/Brn/Grn	0	1	0	0	1
	17-Owl Crk Black	0	5	9	0	14
	Subtotal	*3*	*58*	*20*	*0*	*81*
Southeast Range	02-C White	1	6	0	0	7
	06-HL Tan	3	16	1	5	25
	07-Foss Pale Brown	0	2	0	0	2
	09-HL Tr Brown	0	7	0	0	7
	10-HL Blue	0	1	0	0	1
	Subtotal	*4*	*32*	*1*	*5*	*42*
West Fort	03-AM Gray	2	1	0	0	3
	04-7 Mile Novac	0	1	0	0	1
	Subtotal	*2*	*2*	*0*	*0*	*4*
Subtotal		***10***	***107***	***21***	***5***	***143***
Unidentified Types						
	Indet Black	4	3	2	0	9
	Indet Dk Brown	2	35	8	1	46
	Indet Dk Gray	3	64	0	10	71
	Indet Lt Brown	12	149	158	25	342
	Indet Lt Gray	2	24	0	5	31
	Indet Misc.	3	40	2	7	52
	Indet Mottled	1	5	1	2	9
	Indet Trans	0	6	4	0	10
	Indet White	2	42	14	28	86
	Subtotal	*29*	*368*	*189*	*78*	*664*
Total		**39**	**475**	**210**	**83**	**807**

Table G-27 Percentage of Lithic Debitage Characteristics by Chert Type for Stampede Site Group.

		Total Debitage			Small Debitage (<0.9 cm)		Large Debitage (>1.8 cm)		Medium Debitage 0.9 to 1.8 cm
Lithic Material	N	decorticate	partial cortex	all cortex	Total	decorticate	Total	decorticate	Total
06-HL Tan	25	0%	0%	36%	56%	64%	80%	20%	0%
07-Foss Pale Brown	2	0%	0%	0%	0%	100%	50%	50%	0%
08-FH Yellow	58	17%	90%	10%	67%	72%	90%	10%	0%
09-HL Tr Brown	7	0%	0%	0%	0%	100%	86%	14%	0%
10-HL Blue	1	0%	0%	0%	0%	100%	100%	0%	0%
14-FH Gray	8	13%	100%	50%	25%	38%	38%	63%	0%
15-Gry/Brn/Grn	1	0%	0%	100%	0%	0%	0%	100%	0%
17-Owl Crk Black	14	21%	100%	43%	100%	36%	100%	0%	0%
18-C Mottled	3	0%	0%	100%	33%	0%	33%	67%	0%
22-C Mott/Flecks	7	0%	0%	14%	14%	86%	100%	0%	0%
23-C Mott/Banded	3	0%	0%	100%	33%	0%	33%	67%	0%
27-C Novaculite	3	0%	0%	33%	33%	0%	33%	0%	0%
Indet Black	9	67%	100%	22%	11%	11%	89%	11%	0%
Indet Dk Brown	46	63%	93%	0%	0%	37%	89%	11%	0%
Indet Dk Gray	77	45%	100%	12%	4%	43%	92%	8%	0%
Indet Lt Brown	344	38%	93%	10%	48%	52%	87%	10%	1%
Indet Lt Gray	31	16%	100%	6%	0%	77%	81%	13%	0%
Indet Misc.	52	21%	91%	15%	38%	63%	73%	21%	0%
Indet Mottled	9	0%	0%	78%	0%	22%	22%	56%	0%
Indet Trans	10	20%	100%	0%	0%	80%	100%	0%	0%
Indet White	86	41%	100%	21%	83%	38%	94%	2%	0%

Table G-28 Count of Lithic Class by Chert Province and Chert Type for West Cowhouse Site Group.

Chert Province	Material	Class				
		Core	Debitage	Point	Tool	Total
Identified Types						
Cowhouse	18-C Mottled	1	93	1	11	106
	19-C Dr Gray	2	92	1	12	107
	20-C Shell Hash	0	1	0	0	1
	21-C Lgt Gray	0	7	0	0	7
	22-C Mott/Flecks	2	88	1	24	115
	23-C Mott/Banded	0	53	0	1	54
	24-C Br Fossil	0	6	0	1	7
	25-C Br Fleck	0	2	0	0	2
	26-C Striated	0	4	0	C	4
	27-C Novaculite	0	2	0	2	4
	28-Table Rock Flat	0	32	0	0	32
	Subtotal	*5*	*380*	*3*	*51*	*439*
North Fort	08-FH Yellow	0	475	4	14	493
	11-ER Flat	0	5	0	0	5
	14-FH Gray	2	139	1	13	155
	15-Gry/Brn/Grn	3	330	6	15	354
	16-Leona Park	0	1	0	0	1
	17-Owl Crk Black	1	247	3	10	261
	Subtotal	*6*	*1197*	*14*	*52*	*1269*
Southeast Range	HL Blue (1&10)	0	37	0	3	40
	02-C White	0	26	0	3	29
	05-Texas Novac	0	6	0	0	6
	06-HL Tan	4	522	24	40	590
	07-Foss Pale Brown	0	27	0	3	30
	09-HL Tr Brown	0	159	5	21	185
	13-ER Flecked	0	5	0	2	7
	Subtotal	*4*	*782*	*29*	*72*	*887*
West Fort	03-AM Gray	0	24	1	1	26
	04-7 Mile Novac	0	1	0	0	1
	Subtotal	*0*	*25*	*1*	*1*	*27*
Subtotal		*15*	*2384*	*47*	*176*	*2622*
Unidentified Types						
	Indet Black	0	221	1	0	222
	Indet Dk Brown	1	1275	6	20	1302
	Indet Dk Gray	1	956	2	11	970
	Indet Lt Brown	1	3977	11	40	4029
	Indet Lt Gray	3	661	8	12	684
	Indet Misc.	0	1009	7	8	1024
	Indet Mottled	0	358	4	16	378
	Indet Trans	0	173	0	2	175
	Indet White	0	215	5	5	225
	Subtotal	*6*	*8845*	*44*	*114*	*9009*
Total		**21**	**11229**	**91**	**290**	**11631**

Table G-29 Count of Lithic Debitage by Chert Province and Chert Type for Sites within the West Cowhouse Site Group.

		Site																
Chert Province	Lithic Material	CV0088	CV0090	CV0095	CV0097	CV0098	CV0099	CV0317	CV0389	CV0582	CV0960	CV1033	CV1038	CV1098	CV1105	CV1123	CV1200	Total
Identified Types																		
Cowhouse	18-C Mottled	25	0	3	11	0	8	19	7	0	2	0	0	0	2	16	0	93
	19-C Dr Gray	5	0	0	22	0	11	19	7	0	10	0	4	0	0	8	6	92
	20-C Shell Hash	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
	21-C Lgt Gray	0	0	0	2	0	0	2	0	0	0	0	3	0	0	0	0	7
	22-C Mott/Flecks	7	0	5	11	0	29	15	5	0	5	0	1	0	0	10	0	88
	23-C Mott/Banded	0	1	1	22	0	2	17	0	0	1	0	1	0	0	6	2	53
	24-C Br Fossil	2	0	0	1	0	1	2	0	0	0	0	0	0	0	0	0	6
	25-C Br Fleck	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	2
	26-C Striated	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2	4
	27-C Novaculite	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
	28-Table Rock Flat	0	0	0	24	0	0	1	0	0	6	0	0	0	1	0	0	32
	Subtotal	*39*	*1*	*10*	*93*	*0*	*51*	*80*	*19*	*0*	*24*	*0*	*10*	*0*	*3*	*40*	*10*	*380*
North Fort	08-FH Yellow	25	6	6	92	1	24	64	45	2	174	0	18	0	13	3	2	475
	11-ER Flat	0	1	0	0	0	1	0	0	0	2	0	0	0	1	0	0	5
	14-FH Gray	21	1	8	24	0	3	37	9	5	8	0	4	0	14	3	2	139
	15-Gry/Brn/Grn	4	4	5	64	0	15	194	34	0	4	0	0	0	5	1	0	330
	16-Leona Park	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	17-Owl Crk Black	6	1	0	105	0	4	83	12	0	25	0	1	0	4	3	3	247
	Subtotal	*56*	*13*	*19*	*286*	*1*	*47*	*378*	*100*	*7*	*213*	*0*	*23*	*0*	*37*	*10*	*7*	*1197*
Southeast Range	01-HL Blue(I)	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	4
	02-C White	3	0	0	6	0	2	7	1	0	5	2	0	0	0	0	0	26
	05-Texas Novac	0	0	0	3	0	0	0	0	0	1	0	1	0	1	0	0	6
	06-HL Tan	9	2	7	68	0	51	142	50	6	83	1	4	1	85	9	4	522
	07-Foss Pale Brown	1	0	1	19	0	0	2	1	0	2	0	0	0	1	0	0	27
	09-HL Tr Brown	1	0	1	87	0	3	20	18	0	16	0	2	0	5	1	5	159
	10-HL Blue	1	0	2	11	0	0	11	1	0	3	1	1	0	2	0	0	33
	13-ER Flecked	1	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	5
	Subtotal	*16*	*2*	*11*	*194*	*0*	*56*	*184*	*71*	*6*	*114*	*4*	*8*	*1*	*94*	*12*	*9*	*782*
West Fort	03-AM Gray	2	0	1	6	0	1	1	1	2	5	0	0	0	4	0	1	24
	04-7 Mile Novac	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
	Subtotal	*2*	*0*	*1*	*6*	*0*	*1*	*2*	*1*	*2*	*5*	*0*	*0*	*0*	*4*	*0*	*1*	*25*
Subtotal		***113***	***16***	***41***	***579***	***1***	***155***	***644***	***191***	***15***	***356***	***4***	***41***	***1***	***138***	***62***	***27***	***2384***
Unidentified Types																		
	Indet Black	16	0	0	46	1	16	25	62	1	44	0	0	0	4	5	1	221
	Indet Dk Brown	25	5	34	512	0	93	64	169	0	331	0	10	0	15	5	12	1275
	Indet Dk Gray	84	6	6	126	2	68	231	203	1	132	1	2	0	70	16	8	956
	Indet Lt Brown	106	17	172	1617	6	166	517	525	2	553	8	80	4	85	66	53	3977
	Indet Lt Gray	89	15	17	152	9	22	103	69	1	136	1	5	0	29	7	6	661
	Indet Misc.	49	2	4	255	1	50	207	141	0	239	0	0	0	19	17	25	1009
	Indet Mottled	41	2	3	31	4	72	64	82	2	16	3	0	0	18	18	2	358
	Indet Trans	12	0	0	38	0	14	16	56	0	28	0	2	0	0	7	0	173
	Indet White	12	5	11	20	0	28	33	57	2	33	2	1	0	3	5	3	215
	Subtotal	*434*	*52*	*247*	*2797*	*23*	*529*	*1260*	*1364*	*9*	*1512*	*15*	*100*	*4*	*243*	*146*	*110*	*8845*
Other	Quartz	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Quartzite	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Subtotal	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*2*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*2*
Total		**547**	**68**	**288**	**3376**	**24**	**684**	**1904**	**1557**	**24**	**1868**	**19**	**141**	**5**	**381**	**208**	**137**	**11231**

Table G-30 Percentage of Lithic Debitage Characteristics by Chert Type for West Cowhouse Site Group.

		Total Debitage			Small Debitage (<0.9 cm)		Large Debitage (>1.8 cm)		Medium Debitage 0.9 to 1.8 cm
Lithic Material	N	decorticate	partial cortex	all cortex	Total	decorticate	Total	decorticate	Total
HL Blue (1&10)	37	76%	24%	0%	11%	100%	49%	61%	41%
02-C White	26	65%	31%	0%	8%	100%	58%	67%	35%
03-AM Gray	24	75%	25%	0%	0%	0%	42%	70%	58%
04-7 Mile Novac	1	0%	100%	0%	0%	0%	100%	0%	0%
05-Texas Novac	6	33%	67%	0%	0%	0%	100%	33%	0%
06-HL Tan	522	87%	13%	0%	15%	100%	31%	62%	53%
07-Foss Pale Brown	27	37%	59%	0%	0%	0%	52%	14%	48%
08-FH Yellow	475	86%	14%	0%	24%	99%	18%	64%	58%
09-HL Tr Brown	159	75%	22%	0%	17%	85%	31%	53%	52%
11-ER Flat	5	50%	50%	0%	0%	0%	75%	33%	25%
13-ER Flecked	5	80%	20%	0%	0%	0%	60%	67%	40%
14-FH Gray	139	71%	27%	1%	2%	100%	50%	54%	48%
15-Gry/Brn/Grn	330	80%	20%	0%	22%	100%	25%	62%	53%
16-Leona Park	1	100%	0%	0%	0%	0%	100%	100%	0%
17-Owl Crk Black	247	88%	12%	0%	45%	100%	10%	50%	45%
18-C Mottled	93	31%	68%	0%	0%	0%	89%	25%	11%
19-C Dr Gray	92	48%	52%	0%	1%	100%	59%	39%	40%
20-C Shell Hash	1	100%	0%	0%	0%	0%	100%	100%	0%
21-C Lgt Gray	7	57%	29%	0%	0%	0%	43%	14%	57%
22-C Mott/Flecks	88	47%	51%	1%	0%	0%	65%	20%	35%
23-C Mott/Banded	53	25%	74%	2%	0%	0%	74%	13%	26%
24-C Br Fossil	6	67%	33%	0%	0%	0%	67%	33%	33%
25-C Br Fleck	2	50%	50%	0%	0%	0%	0%	0%	100%
26-C Striated	4	50%	25%	25%	0%	0%	100%	50%	0%
27-C Novaculite	2	50%	50%	0%	0%	0%	50%	0%	50%
28-Table Rock Flat	32	72%	28%	0%	0%	0%	6%	0%	94%
Indet Black	221	88%	10%	0%	35%	99%	8%	4%	57%
Indet Dk Brown	1275	91%	9%	0%	44%	98%	7%	4%	49%
Indet Dk Gray	956	86%	14%	0%	34%	98%	10%	5%	56%
Indet Lt Brown	3977	81%	17%	1%	42%	92%	11%	48%	48%
Indet Lt Gray	661	90%	10%	0%	35%	95%	10%	64%	55%
Indet Misc.	1009	71%	25%	0%	42%	80%	7%	36%	51%
Indet Mottled	358	32%	65%	0%	12%	14%	41%	33%	46%
Indet Trans	173	84%	16%	0%	16%	100%	14%	50%	67%
Indet White	215	85%	13%	0%	27%	97%	15%	48%	58%

Table G-31 Count of Lithic Class by Chert Province and Chert Type for Table Rock Site Group.

		Class				
Chert Province	Material	Core	Debitage	Point	Tool	Total
Identified Types						
Cowhouse	18-C Mottled	0	16	1	1	18
	19-C Dr Gray	0	10	1	1	12
	21-C Lgt Gray	0	2	0	0	2
	22-C Mott/Flecks	1	11	0	4	16
	23-C Mott/Banded	0	9	0	0	9
	26-C Striated	0	1	0	0	1
	27-C Novaculite	0	1	0	0	1
	28-Table Rock Flat	0	1	0	0	1
	Subtotal	*1*	*51*	*2*	*6*	*60*
North Fort	08-FH Yellow	0	38	1	2	41
	14-FH Gray	0	6	2	3	11
	15-Gry/Brn/Grn	0	9	2	3	14
	17-Owl Crk Black	0	13	0	0	13
	Subtotal	*0*	*66*	*5*	*8*	*79*
Southeast Range	HL Blue (1&10)	0	8	0	1	9
	02-C White	0	1	0	1	2
	06-HL Tan	0	47	3	7	57
	07-Foss Pale Brown	0	3	0	0	3
	09-HL Tr Brown	0	10	0	2	12
	Subtotal	*0*	*69*	*3*	*11*	*83*
West Fort	03-AM Gray	0	11	0	0	11
Subtotal		***1***	***197***	***10***	***25***	***233***
Unidentified Types						
	Indet Black	0	11	0	0	11
	Indet Dk Brown	0	133	3	3	139
	Indet Dk Gray	0	42	2	0	44
	Indet Lt Brown	0	655	1	13	669
	Indet Lt Gray	0	95	1	4	100
	Indet Misc.	0	46	0	2	48
	Indet Mottled	0	17	0	3	20
	Indet Trans	0	13	0	0	13
	Indet White	0	43	0	1	44
	Subtotal	*0*	*1055*	*7*	*26*	*1088*
Total		**1**	**1252**	**17**	**51**	**1321**

Table G-32 Count of Lithic Debitage by Chert Province and Chert Type for Sites within the Table Rock Site Group.

		Site						
Chert Province	Lithic Material	CV0174	CV0319	CV0594	CV1116	CV1136	CV1423	Total
Identified Types								
Cowhouse	18-C Mottled	13	0	0	1	2	0	16
	19-C Dr Gray	5	0	0	0	5	0	10
	21-C Lgt Gray	2	0	0	0	0	0	2
	22-C Mott/Flecks	9	0	0	0	2	0	11
	23-C Mott/Banded	7	2	0	0	0	0	9
	26-C Striated	0	0	0	0	1	0	1
	27-C Novaculite	1	0	0	0	0	0	1
	28-Table Rock Flat	0	0	0	1	0	0	1
	Subtotal	*37*	*2*	*0*	*2*	*10*	*0*	*51*
North Fort	08-FH Yellow	21	3	1	4	4	5	38
	14-FH Gray	3	2	0	0	1	0	6
	15-Gry/Brn/Grn	4	0	0	0	5	0	9
	17-Owl Crk Black	2	0	0	2	5	4	13
	Subtotal	*30*	*5*	*1*	*6*	*15*	*9*	*66*
Southeast Range	02-C White	0	0	1	0	0	0	1
	06-HL Tan	14	0	5	0	1	27	47
	07-Foss Pale Brown	2	0	0	0	0	1	3
	09-HL Tr Brown	7	0	0	2	1	0	10
	10-HL Blue	5	0	0	1	2	0	8
	Subtotal	*28*	*0*	*6*	*3*	*4*	*28*	*69*
West Fort	03-AM Gray	6	0	0	5	0	0	11
Subtotal		***101***	***7***	***7***	***16***	***29***	***37***	***197***
Unidentified Types								
	Indet Black	3	1	0	0	2	5	11
	Indet Dk Brown	77	0	0	11	17	28	133
	Indet Dk Gray	17	5	0	13	2	5	42
	Indet Lt Brown	406	7	1	44	130	67	655
	Indet Lt Gray	37	7	3	25	5	18	95
	Indet Misc.	21	8	3	11	1	2	46
	Indet Mottled	10	1	0	0	1	5	17
	Indet Trans	12	0	0	0	1	0	13
	Indet White	5	1	4	22	5	6	43
	Subtotal	*588*	*30*	*11*	*126*	*164*	*136*	*1055*
Total		**689**	**37**	**18**	**142**	**193**	**173**	**1252**

Table G-33 Percentage of Lithic Debitage Characteristics by Chert Type for Table Rock Site Group.

		Total Debitage			Small Debitage (<0.9 cm)		Large Debitage (>1.8 cm)		Medium Debitage 0.9 to 1.8 cm
Lithic Material	N	decorticate	partial cortex	all cortex	Total	decorticate	Total	decorticate	Total
HL Blue (1&10)	8	88%	13%	0%	25%	100%	50%	75%	25%
02-C White	1	100%	0%	0%	0%	0%	0%	0%	100%
03-AM Gray	11	82%	18%	0%	0%	0%	18%	50%	64%
06-HL Tan	47	89%	11%	0%	0%	0%	36%	71%	64%
07-Foss Pale Brown	3	67%	33%	0%	0%	0%	33%	0%	67%
08-FH Yellow	38	76%	24%	0%	11%	75%	18%	43%	71%
09-HL Tr Brown	10	70%	10%	0%	0%	0%	50%	40%	50%
14-FH Gray	6	50%	50%	0%	0%	0%	50%	33%	50%
15-Gry/Brn/Grn	9	67%	33%	0%	11%	0%	56%	80%	33%
17-Owl Crk Black	13	92%	8%	0%	31%	100%	15%	50%	54%
18-C Mottled	16	38%	63%	0%	0%	0%	69%	9%	31%
19-C Dr Gray	10	90%	0%	0%	10%	100%	60%	83%	40%
21-C Lgt Gray	2	100%	0%	0%	0%	0%	50%	50%	50%
22-C Mott/Flecks	11	73%	27%	0%	0%	0%	64%	45%	36%
23-C Mott/Banded	9	44%	56%	0%	0%	0%	56%	0%	44%
26-C Striated	1	100%	0%	0%	0%	0%	0%	0%	100%
27-C Novaculite	1	100%	0%	0%	0%	0%	100%	100%	0%
28-Table Rock Flat	1	100%	0%	0%	0%	0%	0%	0%	100%
Indet Black	11	82%	18%	0%	73%	100%	9%	0%	18%
Indet Dk Brown	133	86%	14%	0%	35%	94%	9%	2%	56%
Indet Dk Gray	42	90%	10%	0%	29%	92%	12%	10%	60%
Indet Lt Brown	655	78%	20%	0%	29%	88%	12%	44%	59%
Indet Lt Gray	95	84%	13%	0%	21%	100%	16%	67%	63%
Indet Misc.	46	70%	28%	0%	26%	100%	17%	13%	57%
Indet Mottled	17	29%	71%	0%	0%	0%	65%	18%	35%
Indet Trans	13	92%	8%	0%	62%	88%	0%	0%	38%
Indet White	43	100%	0%	0%	26%	100%	12%	100%	63%

Table G-34 Count of Lithic Class by Chert Province and Chert Type for Turkey Run Site Group.

Chert Province	Material	Core	Debitage	Point	Tool	Total
Identified Types						
Cowhouse	18-C Mottled	1	21	0	1	23
	19-C Dr Gray	0	1	0	0	1
	22-C Mott/Flecks	0	0	0	1	1
	28-Table Rock Flat	0	1	0	0	1
	Subtotal	*1*	*23*	*0*	*2*	*26*
North Fort	08-FH Yellow	0	13	0	0	13
	14-FH Gray	0	4	0	0	4
	15-Gry/Brn/Grn	0	1	1	1	3
	16-Leona Park	0	1	0	0	1
	17-Owl Crk Black	0	3	2	1	6
	Subtotal	*0*	*22*	*3*	*2*	*27*
Southeast Range	02-C White	0	7	0	0	7
	06-HL Tan	1	286	1	6	294
	07-Foss Pale Brown	0	2	0	0	2
	09-HL Tr Brown	0	4	0	0	4
	10-HL Blue	0	2	0	0	2
	Subtotal	*1*	*301*	*1*	*6*	*309*
West Fort	03-AM Gray	0	8	1	3	12
	04-7 Mile Novac	0	7	0	0	7
	Subtotal	*0*	*15*	*1*	*3*	*19*
Subtotal		***2***	***361***	***5***	***13***	***381***
Unidentified Types						
	Indet Black	0	7	0	0	7
	Indet Dk Brown	0	96	0	4	100
	Indet Dk Gray	0	157	0	2	159
	Indet Lt Brown	0	622	2	6	630
	Indet Lt Gray	0	102	2	5	109
	Indet Misc.	0	84	1	0	85
	Indet Mottled	0	41	0	3	44
	Indet Trans	0	4	0	0	4
	Indet White	0	33	0	2	35
	Subtotal	*0*	*1146*	*5*	*22*	*1173*
Total		**2**	**1507**	**10**	**35**	**1554**

Table G-35 Count of Lithic Debitage by Chert Province and Chert Type for Sites within the Turkey Run Site Group.

Chert Province	Lithic Material	CV0117	CV1195	CV1378	CV1391	CV1403	Total
		Site					
Identified Types							
Cowhouse	18-C Mottled	12	9	0	0	0	21
	19-C Dr Gray	1	0	0	0	0	1
	22-C Mott/Flecks	0	0	0	0	0	0
	28-Table Rock Flat	0	0	0	1	0	1
	Subtotal	*13*	*9*	*0*	*1*	*0*	*23*
North Fort	08-FH Yellow	9	1	0	3	0	13
	14-FH Gray	4	0	0	0	0	4
	15-Gry/Brn/Grn	0	0	0	0	1	1
	16-Leona Park	1	0	0	0	0	1
	17-Owl Crk Black	1	1	0	1	0	3
	Subtotal	*15*	*2*	*0*	*4*	*1*	*22*
Southeast Range	02-C White	2	0	0	1	4	7
	06-HL Tan	90	195	0	1	0	286
	07-Foss Pale Brown	2	0	0	0	0	2
	09-HL Tr Brown	0	1	0	3	0	4
	10-HL Blue	0	0	0	2	0	2
	Subtotal	*94*	*196*	*0*	*7*	*4*	*301*
West Fort	03-AM Gray	1	1	0	6	0	8
	04-7 Mile Novac	7	0	0	0	0	7
	Subtotal	*8*	*1*	*0*	*6*	*0*	*15*
Subtotal		***130***	***208***	***0***	***18***	***5***	***361***
Unidentified Types							
	Indet Black	7	0	0	0	0	7
	Indet Dk Brown	53	19	0	19	5	96
	Indet Dk Gray	54	78	3	7	15	157
	Indet Lt Brown	234	176	7	172	33	622
	Indet Lt Gray	49	17	3	18	15	102
	Indet Misc.	80	3	0	0	1	84
	Indet Mottled	36	1	1	1	2	41
	Indet Trans	1	1	0	2	0	4
	Indet White	13	3	0	3	14	33
	Subtotal	*527*	*298*	*14*	*222*	*85*	*1146*
Total		**657**	**506**	**14**	**240**	**90**	**1507**

Table G-36 Percentage of lithic Debitage Characteristics by Chert Type for Turkey Run Site Group.

		Total Debitage			Small Debitage (<0.9 cm)		Large Debitage (>1.8 cm)		Medium Debitage 0.9 to 1.8 cm
Lithic Material	N	decorticate	partial cortex	all cortex	Total	decorticate	Total	decorticate	Total
02-C White	7	100%	0%	0%	0%	0%	57%	100%	43%
03-AM Gray	8	100%	0%	0%	0%	0%	38%	100%	63%
04-7 Mile Novac	7	14%	86%	0%	0%	0%	71%	20%	29%
06-HL Tan	286	95%	5%	0%	17%	100%	16%	71%	67%
07-Foss Pale Brown	2	50%	50%	0%	0%	0%	50%	0%	50%
08-FH Yellow	13	62%	38%	0%	8%	100%	31%	0%	62%
09-HL Tr Brown	4	50%	50%	0%	0%	0%	50%	0%	50%
10-HL Blue	2	50%	100%	0%	0%	50%	100%	0%	0%
14-FH Gray	4	50%	50%	0%	0%	0%	75%	33%	25%
15-Gry/Brn/Grn	1	100%	0%	0%	0%	0%	0%	0%	100%
16-Leona Park	1	0%	100%	0%	0%	0%	100%	0%	0%
17-Owl Crk Black	3	67%	33%	0%	0%	0%	0%	0%	100%
18-C Mottled	21	76%	24%	0%	0%	0%	71%	67%	29%
19-C Dr Gray	1	100%	0%	0%	0%	0%	100%	100%	0%
28-Table Rock Flat	1	100%	0%	0%	0%	0%	0%	0%	100%
Indet Black	7	100%	0%	0%	14%	100%	29%	29%	57%
Indet Dk Brown	96	88%	13%	0%	28%	100%	14%	8%	58%
Indet Dk Gray	157	92%	8%	0%	26%	100%	14%	10%	60%
Indet Lt Brown	622	85%	15%	0%	21%	92%	16%	72%	63%
Indet Lt Gray	102	78%	22%	0%	19%	100%	33%	50%	48%
Indet Misc.	84	85%	15%	0%	10%	100%	2%	0%	88%
Indet Mottled	41	39%	61%	0%	0%	0%	66%	30%	34%
Indet Trans	4	100%	0%	0%	25%	100%	0%	0%	75%
Indet White	33	85%	15%	0%	9%	67%	21%	100%	70%

Table G-37 Projectile Points from Nolan South Site Group by Chert Province and Chert Type.

Site_Group Nolan South

Chert Province	Lithic Material	Projectile Point Type																								
		Angostura	Bonham	Belverde	Castroville	Chadbourne	Dart	Edgewood	Ensor	Fresno	Gower	Lange	Marcos	Marshall	Martindale	Montell	Morrill	Other Arrow	Other Dart	Other Point	Pedernales	Plainview	Scallorn	Travis	Young	Total
Identified Types																										
North Fort	08-FH Yellow	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	15-Gry/Brn/Grn	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	17-Owl Crk Black	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	4
	Subtotal	*1*	*0*	*0*	*0*	*0*	*1*	*0*	*1*	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*2*	*0*	*0*	*0*	*0*	*0*	*0*	*6*
Southeast Range	06-HL Tan	0	0	0	0	0	0	1	1	0	0	1	0	3	0	0	1	2	1	0	2	0	1	0	0	13
	09-HL Tr Brown	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	1	0	0	0	5
	13-ER Flecked	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	Subtotal	*0*	*0*	*1*	*0*	*0*	*0*	*1*	*1*	*0*	*0*	*2*	*0*	*3*	*0*	*0*	*1*	*2*	*3*	*0*	*2*	*1*	*1*	*0*	*1*	*19*
Subtotal		***1***	***0***	***1***	***0***	***0***	***1***	***1***	***2***	***0***	***0***	***2***	***0***	***3***	***1***	***0***	***1***	***2***	***5***	***0***	***2***	***1***	***1***	***0***	***1***	***25***
Unidentified Types																										
	Indet Black	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
	Indet Dk Brown	0	0	0	0	0	1	0	0	1	0	0	1	0	0	1	0	0	2	0	0	0	6	0	0	12
	Indet Dk Gray	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0	5
	Indet Lt Brown	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	6	4	1	1	0	1	1	0	16
	Indet Lt Gray	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	2	0	0	0	0	4
	Indet Misc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	2
	Indet Mottled	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	3
	Indet White	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	3	0	0	6
Subtotal		***0***	***1***	***1***	***1***	***1***	***1***	***0***	***0***	***1***	***1***	***0***	***1***	***0***	***1***	***1***	***0***	***9***	***8***	***3***	***5***	***0***	***14***	***1***	***0***	***50***
Total		**1**	**1**	**2**	**1**	**1**	**2**	**1**	**2**	**1**	**1**	**2**	**1**	**3**	**2**	**1**	**1**	**11**	**13**	**3**	**7**	**1**	**15**	**1**	**1**	**75**

Table G-38 Projectile Points from Nolan Cowhouse Site Group by Chert Province and Chert Type.

		Projectile Point Type													
Chert Province	Lithic Material	Bonham	Bulbar Stemmed	Castroville	Darl	Ensor	Marcos	Other Arrow	Other Dart	Other Point	Pedernales	Perdiz	Sabinal	Scallorn	Total
Identified Types															
North Fort	08-FH Yellow	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	15-Gry/Brn/Grn	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	17-Owl Crk Black	0	0	0	0	0	0	0	1	0	1	0	0	0	2
	Subtotal	*0*	*1*	*0*	*0*	*0*	*0*	*1*	*1*	*0*	*1*	*0*	*0*	*0*	*4*
Southeast Range	06-HL Tan	0	1	1	1	1	0	2	2	1	0	1	1	0	11
	10-HL Blue	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Subtotal	*0*	*1*	*1*	*1*	*1*	*0*	*2*	*3*	*1*	*0*	*1*	*1*	*0*	*12*
Subtotal		***0***	***2***	***1***	***1***	***1***	***0***	***3***	***4***	***1***	***1***	***1***	***1***	***0***	***16***
Unidentified Types															
	Indet Dk Brown	1	0	0	1	0	0	2	1	0	0	0	0	1	6
	Indet Dk Gray	0	0	0	3	0	0	1	1	0	1	0	0	0	6
	Indet Lt Brown	2	1	0	1	0	0	4	3	1	0	2	0	3	17
	Indet Lt Gray	0	0	0	1	0	0	0	1	0	0	0	0	0	2
	Indet Misc.	0	0	0	0	0	1	0	0	0	0	0	0	1	2
	Indet Mottled	2	0	0	0	0	0	0	0	0	0	0	0	0	2
	Indet White	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Subtotal		***5***	***1***	***0***	***6***	***0***	***1***	***7***	***6***	***1***	***1***	***2***	***0***	***6***	***36***
Total		**5**	**3**	**1**	**7**	**1**	**1**	**10**	**10**	**2**	**2**	**3**	**1**	**6**	**52**

Table G-39 Projectile Points from Cowhouse/Taylor/Bear Site Group by Chert Province and Chert Type.

		Projectile Point Type											
Chert Province	Lithic Material	Bulverde	Dart	Ellis	Fresno	Other Arrow	Other Dart	Other Point	Pedernales	Scallorn	Uvalde	Wells	Total
Identified Types													
Cowhouse	19-C Dr Gray	0	0	0	0	0	1	0	0	0	0	0	1
North Fort	08-FH Yellow	0	1	0	0	0	0	0	0	0	1	0	2
	15-Gry/Brn/Grn	1	0	0	0	0	0	0	0	0	0	0	1
	17-Owl Crk Black	0	0	0	0	0	0	0	0	1	0	0	1
	Subtotal	*1*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*1*	*1*	*0*	*4*
Southeast Range	06-HL Tan	0	0	0	0	0	1	0	0	0	0	1	2
Subtotal		***1***	***1***	***0***	***0***	***0***	***2***	***0***	***0***	***1***	***1***	***1***	***7***
Unidentified Types													
	Indet Dk Brown	0	0	0	0	0	2	0	0	0	0	0	2
	Indet Dk Gray	0	0	1	0	2	1	0	1	0	0	0	5
	Indet Lt Brown	0	0	0	2	0	0	2	0	3	0	0	7
	Indet Misc.	1	0	0	0	0	0	0	0	1	0	0	2
	Indet Mottled	0	0	0	0	0	0	0	0	1	0	0	1
Subtotal		***1***	***0***	***1***	***2***	***2***	***3***	***2***	***1***	***5***	***0***	***0***	***17***
Total		**2**	**1**	**1**	**2**	**2**	**5**	**2**	**1**	**6**	**1**	**1**	**24**

Table G-40 Projectile Points from Owl Creek Site Group by Chert Province and Chert Type.

Chert Province	Lithic Material	Projectile Point Type: Alamagre	Andice	Bonham	Bulverde	Castroville	Clifton	Darl	Ellis	Ensor	Frio	Lange	Langtry	Marcos	Marshall	Montell	Morrill	Other Arrow	Other Dart	Palmillas	Pedernales	Scallorn	Starr	Travis	Wells	Total
Identified Types																										
Cowhouse	18-C Mottled	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
North Fort	08-FH Yellow	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	4
	14-FH Gray	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	15-Gry/Brn/Grn	1	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2	0	0	0	0	7
	17-Owl Crk Black	0	2	0	0	0	0	0	0	1	0	1	1	0	0	0	0	2	3	0	3	0	0	0	0	13
	Subtotal	*1*	*2*	*0*	*1*	*1*	*0*	*0*	*1*	*1*	*1*	*2*	*1*	*0*	*0*	*0*	*0*	*2*	*5*	*0*	*6*	*0*	*0*	*0*	*1*	*25*
Southeast Range	02-C White	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	06-HL Tan	0	0	0	1	0	0	0	0	1	0	0	0	1	2	1	0	0	1	1	6	0	0	0	0	14
	09-HL Tr Brown	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
	Subtotal	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*1*	*2*	*1*	*0*	*0*	*2*	*1*	*7*	*0*	*0*	*0*	*0*	*16*
Subtotal		*1*	*2*	*0*	*2*	*1*	*0*	*0*	*1*	*2*	*1*	*2*	*1*	*1*	*2*	*1*	*1*	*2*	*7*	*1*	*13*	*0*	*0*	*0*	*1*	*42*
Unidentified Types																										
	Indet Dk Brown	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	5
	Indet Dk Gray	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	4
	Indet Lt Brown	0	0	1	0	0	1	1	0	1	0	0	0	0	0	0	0	2	0	0	1	2	1	0	0	10
	Indet Lt Gray	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	4
	Indet Misc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	2	0	0	0	6
	Indet White	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Subtotal		*0*	*0*	*3*	*0*	*0*	*2*	*1*	*1*	*2*	*0*	*1*	*0*	*0*	*0*	*2*	*0*	*5*	*4*	*0*	*3*	*4*	*1*	*1*	*0*	*30*
Total		**1**	**2**	**3**	**2**	**1**	**2**	**1**	**2**	**4**	**1**	**3**	**1**	**1**	**2**	**3**	**1**	**7**	**11**	**1**	**16**	**4**	**1**	**1**	**1**	**72**

Table G-41 Projectile Points from East Henson Site Group by Chert Province and Chert Type.

Chert Province	Lithic Material	Projectile Point Type: Darl	Lange	Other Dart	Total
Identified Types					
North Fort	15-Gry/Brn/Grn	1	0	1	2
	17-Owl Crk Black	1	0	0	1
	Subtotal	*2*	*0*	*1*	*3*
Southeast Range	02-C White	0	0	1	1
	06-HL Tan	1	1	0	2
	Subtotal	*1*	*1*	*1*	*3*
Subtotal		*3*	*1*	*2*	*6*
Unidentified Types					
	Indet Lt Gray	0	0	1	1
Total		**3**	**1**	**3**	**7**

Table G-42 Projectile Points from Shoal/Turnover Site Group by Chert Province and Chert Type.

		Projectile Point Type									
Chert Province	Lithic Material	Bulverde	Darl	Edgewood	Ellis	Other Arrow	Other Dart	Perdiz	Scallorn	Uvalde	Total
Identified Types											
North Fort	08-FH Yellow	0	0	0	1	0	2	0	0	0	3
	14-FH Gray	0	0	1	0	0	0	0	0	0	1
	15-Gry/Brn/Grn	0	0	0	0	1	0	1	0	0	2
	17-Owl Crk Black	0	0	0	0	1	0	0	0	0	1
	Subtotal	*0*	*0*	*1*	*1*	*2*	*2*	*1*	*0*	*0*	*7*
Southeast Range	06-HL Tan	0	1	0	0	0	1	0	0	1	3
Subtotal		***0***	***1***	***1***	***1***	***2***	***3***	***1***	***0***	***1***	***10***
Unidentified Types											
	Indet Lt Brown	0	0	0	0	1	2	0	0	0	3
	Indet Lt Gray	1	0	0	0	0	1	0	0	0	2
	Indet Misc.	0	0	0	0	0	0	0	1	0	1
Subtotal		***1***	***0***	***0***	***0***	***0***	***3***	***0***	***1***	***0***	***6***
Total		**1**	**1**	**1**	**1**	**3**	**6**	**1**	**1**	**1**	**16**

Table G-43 Projectile Points from Shell Mountain Site Group by Chert Province and Chert Type.

Chert Province	Lithic Material	Projectile Point Type																												
		Bonham	Bulbar Stemmed	Bulverde	Cameron	Castroville	Caton	Cliffton	Darl	Edgewood	Ensor	Fairland	Fresno	Frio	Lange	Marcos	Marshall	Martindale	Morrell	Morrill	Nolan	Other Arrow	Other Dart	Pedernales	Perdiz	Sabinal	Scallorn	Travis	Young	Total
Identified Types																														
Cowhouse	19-C Dr Gray	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
North Fort	08-FH Yellow	0	0	0	0	3	0	0	1	1	1	1	0	0	0	1	2	0	0	0	0	4	3	1	0	0	1	0	0	19
	11-ER Flat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	14-FH Gray	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	4
	15-Gry/Brn/Grn	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	4
	17-Owl Crk Black	0	0	0	0	1	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	2	0	0	8
	Subtotal	*0*	*0*	*1*	*0*	*5*	*0*	*0*	*1*	*3*	*2*	*1*	*0*	*0*	*2*	*1*	*3*	*0*	*0*	*0*	*0*	*5*	*6*	*3*	*0*	*0*	*3*	*0*	*0*	*36*
Southeast Range	06-HL Tan	0	0	0	0	3	0	0	1	0	2	0	0	0	0	2	1	0	2	1	0	1	6	6	0	0	5	0	0	30
	09-HL Tr Brown	0	0	1	0	3	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	8
	13-ER Flecked	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
	Subtotal	*0*	*0*	*1*	*0*	*7*	*0*	*0*	*1*	*0*	*2*	*0*	*0*	*0*	*0*	*3*	*2*	*0*	*4*	*1*	*0*	*1*	*6*	*6*	*0*	*0*	*6*	*0*	*0*	*40*
West Fort	03-AM Gray	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2
Subtotal		*0*	*0*	*2*	*0*	*12*	*0*	*0*	*2*	*3*	*4*	*1*	*0*	*0*	*2*	*4*	*5*	*1*	*4*	*1*	*0*	*7*	*13*	*9*	*0*	*0*	*9*	*0*	*0*	*79*
Unidentified Types																														
	Indet Black	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	4
	Indet Dk Brown	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	1	0	0	1	3	1	0	0	3	1	0	13
	Indet Dk Gray	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	5	1	1	0	2	0	0	15
	Indet Lt Brown	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	9	4	2	1	1	10	0	2	32
	Indet Lt Gray	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	2	0	0	9
	Indet Misc.	4	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	3	2	0	0	0	3	0	0	15
	Indet Mottled	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	4
	Indet Trans	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	Indet White	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	3
Subtotal		*4*	*1*	*1*	*1*	*3*	*1*	*1*	*4*	*2*	*2*	*0*	*2*	*1*	*0*	*0*	*0*	*0*	*2*	*0*	'	*20*	*18*	*4*	*2*	*1*	*21*	*1*	*4*	*97*
Total		**4**	**1**	**3**	**1**	**15**	**1**	**1**	**6**	**5**	**6**	**1**	**2**	**1**	**2**	**4**	**5**	**1**	**6**	**1**	**1**	**27**	**31**	**1.)**	**2**	**1**	**30**	**1**	**4**	**176**

Table G-44 Projectile Points from Stampede Site Group by Chert Province and Chert Type.

Chert Province	Lithic Material	Castroville	Marshall	Montell	Other Arrow	Other Dart	Pedernales	Scallorn	Yarbrough	Total
Identified Types										
North Fort	14-FH Gray	0	1	0	0	0	0	0	0	1
	15-Gry/Brn/Grn	0	0	0	0	0	1	0	0	1
	Subtotal	*0*	*1*	*0*	*0*	*0*	*1*	*0*	*0*	*2*
Southeast Range	06-HL Tan	0	0	1	0	4	0	0	0	5
	09-HL Tr Brown	1	0	0	0	0	0	0	0	1
	Subtotal	*1*	*0*	*1*	*0*	*4*	*0*	*0*	*0*	*6*
Subtotal		***1***	***1***	***1***	***0***	***4***	***1***	***0***	***0***	***8***
Unidentified Types										
	Indet Dk Brown	0	0	0	0	0	0	1	0	1
	Indet Lt Brown	0	0	0	0	1	0	1	1	3
	Indet Lt Gray	0	0	0	0	0	0	1	0	1
	Indet White	0	0	0	1	2	0	0	1	4
Subtotal		***0***	***0***	***0***	***1***	***3***	***0***	***3***	***2***	***9***
Total		**1**	**1**	**1**	**1**	**7**	**1**	**3**	**2**	**17**

Projectile Point Type: Castroville, Marshall, Montell, Other Arrow, Other Dart, Pedernales, Scallorn, Yarbrough

Table G-45 Projectile Points from West Cowhouse Site Group by Chert Province and Chert Type.

		Projectile Point Type																								
Chert Province	Lithic Material	Barber	Bonham	Bulverde	Castroville	Darl	Edgewood	Ellis	Ensor	Fairland	Fresno	Godley	Indeterminate	Lange	Marcos	Marshall	Matamoros	Montell	Other Arrow	Other Dart	Other Point	Pedernales	Perdiz	Scallorn	Yarbrough	Total
Identified Types																										
Cowhouse	18-C Mottled	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	19-C Dr Gray	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
	22-C Mott/Flecks	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Subtotal	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*1*	*1*	*0*	*0*	*0*	*0*	*3*
North Fort	08-FH Yellow	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	4
	14-FH Gray	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
	15-Gry/Brn/Grn	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	6
	17-Owl Crk Black	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	3
	Subtotal	*0*	*0*	*1*	*2*	*1*	*1*	*1*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*1*	*3*	*1*	*1*	*0*	*0*	*1*	*14*
Southeast Range	06-HL Tan	0	1	1	2	1	1	0	2	0	0	2	0	1	1	1	0	0	4	4	0	2	1	0	0	24
	09-HL Tr Brown	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	5
	Subtotal	*0*	*1*	*1*	*3*	*1*	*1*	*1*	*2*	*0*	*0*	*2*	*0*	*1*	*3*	*1*	*0*	*0*	*4*	*5*	*0*	*2*	*1*	*0*	*0*	*29*
West Fort	03-AM Gray	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Subtotal		*0*	*1*	*2*	*6*	*2*	*2*	*2*	*3*	*0*	*1*	*2*	*0*	*1*	*3*	*1*	*0*	*0*	*5*	*9*	*2*	*3*	*1*	*0*	*1*	*47*
Unidentified Types																										
	Indet Black	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	Indet Dk Brown	0	0	1	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	3	0	0	0	0	0	6
	Indet Dk Gray	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2
	Indet Lt Brown	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	5	1	0	0	1	2	0	11
	Indet Lt Gray	0	0	1	1	2	1	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	8
	Indet Misc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	1	0	7
	Indet Mottled	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	1	0	0	0	0	0	4
	Indet White	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	0	0	0	1	0	5
Subtotal		*1*	*0*	*2*	*1*	*2*	*1*	*0*	*0*	*1*	*1*	*0*	*5*	*0*	*1*	*0*	*1*	*1*	*10*	*10*	*1*	*0*	*1*	*5*	*0*	*44*
Total		1	1	4	7	4	3	2	3	1	2	2	5	1	4	1	1	1	15	19	3	3	2	5	1	91

Table G-46 Projectile Points from Table Rock Site Group by Chert Province and Chert Type.

		Projectile Point Type												
Chert Province	Lithic Material	Andice	Bonham	Bulverde	Castroville	Edgewood	Ensor	Martindale	Nolan	Other Dart	Pedernales	Scallorn	Wilson	Total
Identified Types														
Cowhouse	18-C Mottled	0	0	0	0	0	0	0	0	0	1	0	0	1
	19-C Dr Gray	0	0	0	0	0	0	0	0	1	0	0	0	1
	Subtotal	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*1*	*1*	*0*	*0*	*2*
North Fort	08-FH Yellow	0	0	0	0	1	0	0	0	0	0	0	0	1
	14-FH Gray	0	0	1	0	0	0	0	0	0	0	1	0	2
	15-Gry/Brn/Grn	0	0	0	0	0	1	0	0	1	0	0	0	2
	Subtotal	*0*	*0*	*1*	*0*	*1*	*1*	*0*	*0*	*1*	*0*	*1*	*0*	*5*
Southeast Range	06-HL Tan	1	0	0	0	0	0	0	0	0	1	0	1	3
Subtotal		***1***	***0***	***1***	***0***	***1***	***1***	***0***	***0***	***2***	***2***	***1***	***1***	***10***
Unidentified Types														
	Indet Dk Brown	0	0	1	1	1	0	0	0	0	0	0	0	3
	Indet Dk Gray	0	1	0	0	0	0	0	0	1	0	0	0	2
	Indet Lt Brown	0	0	0	0	0	0	0	1	0	0	0	0	1
	Indet Lt Gray	0	0	0	0	0	0	1	0	0	0	0	0	1
Subtotal		***0***	***1***	***1***	***1***	***1***	***0***	***1***	***1***	***1***	***0***	***0***	***0***	***7***
Total		**1**	**1**	**2**	**1**	**2**	**1**	**1**	**1**	**3**	**2**	**1**	**1**	**17**

Table G-47 Projectile Points from Turkey Run Site Group by Chert Province and Chert Type.

		Projectile Point Type								
Chert Province	Lithic Material	Bulverde	Dart	Kent	Nolan	Other Arrow	Other Dart	Pedernales	Scallorn	Total
Identified Types										
North Fort	15-Gry/Brn/Grn	0	0	1	0	0	0	0	0	1
	17-Owl Crk Black	0	0	0	0	0	1	0	1	2
	Subtotal	*0*	*0*	*1*	*0*	*0*	*1*	*0*	*1*	*3*
Southeast Range	06-HL Tan	0	0	0	0	0	1	0	0	1
West Fort	03-AM Gray	0	0	0	1	0	0	0	0	1
Subtotal		***0***	***0***	***1***	***1***	***0***	***2***	***0***	***1***	***5***
Unidentified Types										
	Indet Lt Brown	1	0	1	0	0	0	0	0	2
	Indet Lt Gray	0	1	0	0	0	0	1	0	2
	Indet Misc.	0	0	0	0	1	0	0	0	1
Subtotal		***1***	***1***	***1***	***0***	***1***	***0***	***1***	***0***	***5***
Total		**1**	**1**	**2**	**1**	**1**	**2**	**1**	**1**	**10**

Table G-48 Non-projectile point tools from Nolan South Site Group by Chert Province and Chert Type.

		Tool Type																				
Chert Province	Lithic Material	Chopper Type A	Chopper Type B	Clear Fork Type A	complex scraper	Crushing/Abrading	Denticulate	drill	early stage biface	edge modified	end scraper	finished biface	graver	Hammerstone	late stage biface	metate	middle stage biface	side scraper	sinker	spokeshave	utilized	Total
Identified Types																						
Cowhouse	18-C Mottled	0	0	0	0	0	0	0	0	2	0	1	0	0	1	0	0	0	0	0	4	8
	19-C Dr Gray	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	22-C Mott/Flecks	0	0	0	0	0	0	0	3	3	1	2	0	0	4	0	4	0	0	1	1	19
	23-C Mott/Banded	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2
	Subtotal	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*3*	*5*	*1*	*3*	*0*	*0*	*7*	*0*	*5*	*0*	*0*	*1*	*5*	*30*
North Fort	08-FH Yellow	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	2	5
	14-FH Gray	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	4
	15-Gry/Brn/Grn	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	3
	17-Owl Crk Black	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	3
	Subtotal	*0*	*1*	*0*	*0*	*0*	*0*	*0*	*2*	*0*	*0*	*2*	*2*	*0*	*2*	*0*	*1*	*1*	*0*	*0*	*4*	*15*
Southeast Range	01-HL Blue(1 & 10)	1	0	0	0	1	0	0	2	2	0	1	0	0	2	0	1	2	0	3	10	25
	02-C White	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	3
	06-HL Tan	2	0	1	2	0	0	0	14	14	3	7	5	0	12	0	15	3	0	1	35	114
	07-Foss Pale Brown	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	4
	09-HL Tr Brown	1	0	1	2	1	0	1	5	15	4	6	3	0	10	0	9	4	0	0	27	89
	Subtotal	*5*	*0*	*3*	*4*	*2*	*0*	*1*	*21*	*33*	*7*	*14*	*8*	*0*	*24*	*0*	*25*	*9*	*0*	*4*	*75*	*225*
West Fort	03-AM Gray	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Subtotal		*5*	*1*	*3*	*4*	*2*	*0*	*1*	*26*	*38*	*8*	*19*	*10*	*0*	*33*	*0*	*31*	*10*	*0*	*5*	*85*	*281*
Unidentified Types																						
	Indet Black	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	Indet Dk Brown	1	0	0	0	0	0	0	0	7	1	1	0	0	1	0	3	0	0	0	9	23
	Indet Dk Gray	0	0	0	0	0	0	0	0	2	0	1	1	0	1	0	0	0	0	1	3	9
	Indet Lt Brown	0	1	0	0	0	0	0	2	20	2	2	3	0	6	0	10	6	0	1	38	92
	Indet Lt Gray	0	0	0	0	0	0	2	1	5	0	0	0	0	4	0	0	1	0	1	3	17
	Indet Misc.	1	0	0	0	0	0	0	0	2	0	1	0	1	0	0	1	0	0	0	1	7
	Indet Mottled	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	1	0	0	0	2	6
	Indet White	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	2	0	0	4	9
Subtotal		*2*	*1*	*0*	*0*	*0*	*1*	*2*	*4*	*37*	*3*	*5*	*5*	*1*	*15*	*0*	*15*	*9*	*0*	*3*	*60*	*164*
Other	Quartzite	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	3
	Sandstone	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Subtotal	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*2*	*0*	*1*	*0*	*0*	*1*	*0*	*0*	*4*
Total		**7**	**2**	**3**	**4**	**2**	**1**	**3**	**30**	**75**	**11**	**24**	**15**	**3**	**48**	**1**	**46**	**19**	**1**	**8**	**145**	**449**

Table G-49 Non-projectile Point Tools from Nolan Cowhouse Site Group by Chert Province and Chert Type.

		Tool Type													
Chert Province	Lithic Material	Chopper Type A	Denticulate	early stage biface	edge modified	end scraper	finished biface	graver	Hammerstone	late stage biface	middle stage biface	side scraper	spokeshave	utilized	Total
Identified Types															
Cowhouse	18-C Mottled	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	22-C Mott/Flecks	0	0	0	0	0	1	0	0	0	0	0	0	0	1
	26-C Striated	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	Subtotal	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*0*	*1*	*1*	*3*
North Fort	08-FH Yellow	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	14-FH Gray	0	0	0	0	0	1	0	0	0	0	1	0	0	2
	15-Gry/Brn/Grn	0	0	0	1	0	1	0	0	2	0	0	0	0	4
	17-Owl Crk Black	0	0	0	0	0	2	0	0	0	0	0	0	0	2
	Subtotal	*0*	*0*	*1*	*1*	*0*	*4*	*0*	*0*	*2*	*0*	*1*	*0*	*0*	*9*
Southeast Range	02-C White	0	0	0	1	0	0	1	0	0	0	1	0	0	3
	06-HL Tan	2	0	0	4	0	1	3	0	5	1	2	1	13	32
	07-Foss Pale Brown	0	0	0	2	1	0	1	0	0	0	0	0	3	7
	09-HL Tr Brown	0	0	0	3	1	1	0	0	4	0	0	0	3	12
	10-HL Blue	0	0	0	2	0	3	1	0	2	1	0	0	2	11
	13-ER Flecked	0	0	0	0	0	1	0	0	0	0	0	0	0	1
	Subtotal	*2*	*0*	*0*	*12*	*2*	*6*	*6*	*0*	*11*	*2*	*3*	*1*	*21*	*66*
West Fort	03-AM Gray	0	0	0	1	0	0	0	0	0	0	0	0	1	2
Subtotal		***2***	***0***	***1***	***14***	***2***	***11***	***6***	***0***	***13***	***2***	***4***	***2***	***23***	***80***
Unidentified Types															
	Indet Black	0	0	1	0	0	0	0	0	0	0	0	1	0	2
	Indet Dk Brown	0	0	0	0	0	2	0	0	2	0	0	0	3	7
	Indet Dk Gray	0	0	0	0	0	0	0	0	3	0	0	0	4	7
	Indet Lt Brown	0	1	0	5	1	2	3	0	3	4	0	0	6	25
	Indet Lt Gray	0	0	0	3	0	0	0	0	1	0	0	0	2	6
	Indet Misc.	1	0	0	0	0	0	1	0	2	0	1	0	2	7
	Indet Mottled	0	0	0	2	0	0	0	0	2	0	0	0	1	5
	Indet Trans	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	Indet White	0	0	1	3	0	0	0	0	2	0	0	0	3	9
Subtotal		***1***	***1***	***2***	***13***	***1***	***4***	***4***	***0***	***15***	***4***	***1***	***1***	***22***	***69***
Other	Limestone	0	0	0	0	0	0	0	2	0	0	0	0	0	2
Total		**3**	**1**	**3**	**27**	**3**	**15**	**10**	**2**	**28**	**6**	**5**	**3**	**45**	**151**

Table G-50 Non-projectile point tools from East Cowhouse Site Group by Chert Province and Chert Type.

Chert Province	Lithic Material	Tool Type									
		Chopper Type B	Clear Fork Type A	early stage biface	edge modified	end scraper	finished biface	graver	late stage biface	utilized	Total
Identified Types											
Cowhouse	18-C Mottled	0	0	0	0	1	1	0	0	2	4
	22-C Mott/Flecks	0	0	0	1	0	1	0	0	0	2
	23-C Mott/Banded	0	0	0	0	0	0	0	0	1	1
	Subtotal	*0*	*0*	*0*	*1*	*1*	*2*	*0*	*0*	*3*	*7*
North Fort	08-FH Yellow	0	0	0	0	0	0	1	0	1	2
Southeast Range	06-HL Tan	0	0	0	1	0	1	1	0	4	7
	09-HL Tr Brown	1	1	1	0	0	1	0	0	2	6
	10-HL Blue	0	0	0	0	0	0	0	1	1	2
	Subtotal	*1*	*1*	*1*	*1*	*0*	*2*	*1*	*1*	*7*	*15*
Subtotal		***1***	***1***	***1***	***2***	***1***	***4***	***2***	***1***	***11***	***24***
Unidentified Types											
	Indet Dk Brown	0	0	0	2	0	0	0	0	0	2
	Indet Dk Gray	0	0	0	0	0	0	0	1	1	2
	Indet Lt Brown	0	0	0	1	0	1	0	1	2	5
	Indet Misc.	0	0	0	0	0	0	0	0	1	1
	Indet Mottled	0	0	0	1	0	1	0	3	3	8
	Indet White	0	0	0	0	0	0	0	0	1	1
Subtotal		***0***	***0***	***0***	***4***	***0***	***2***	***0***	***5***	***8***	***19***
Total		**1**	**1**	**1**	**6**	**1**	**6**	**2**	**6**	**19**	**43**

Table G-51 Non-projectile point tools from Cowhouse/Taylor/Bear Site Group by Chert Province and Chert Type.

		Tool Type									
Chert Province	Lithic Material	Chopper Type B	edge modified	finished biface	Hammerstone	late stage biface	middle stage biface	side scraper	spokeshave	utilized	Total
Identified Types											
Cowhouse	18-C Mottled	0	0	0	0	0	0	1	0	0	1
North Fort	08-FH Yellow	0	0	0	0	0	0	0	0	2	2
	15-Gry/Brn/Grn	0	0	0	0	0	0	0	0	3	3
	17-Owl Crk Black	0	0	0	0	1	0	0	1	0	2
	Subtotal	*0*	*0*	*0*	*0*	*1*	*0*	*0*	*1*	*5*	*7*
Southeast Range	02-C White	0	0	0	0	0	0	0	0	1	1
	06-HL Tan	0	0	1	0	2	2	1	0	4	10
	09-HL Tr Brown	0	0	0	0	1	0	1	0	0	2
	Subtotal	*0*	*0*	*1*	*0*	*3*	*2*	*2*	*0*	*5*	*13*
Subtotal		***0***	***0***	***1***	***0***	***4***	***2***	***3***	***1***	***10***	***21***
Unidentified Types											
	Indet Dk Gray	0	0	0	0	0	0	0	0	1	1
	Indet Lt Brown	0	3	0	0	4	0	0	1	5	13
	Indet Lt Gray	0	1	0	0	0	0	0	0	1	2
	Indet Mottled	1	0	0	0	0	0	0	1	2	4
	Indet White	0	0	0	0	0	0	0	0	1	1
Subtotal		***1***	***4***	***0***	***0***	***4***	***0***	***0***	***2***	***10***	***21***
Other	Quartzite	0	0	0	1	0	0	0	0	0	1
Total		**1**	**4**	**1**	**1**	**8**	**2**	**3**	**3**	**20**	**43**

Table G-52 Non-projectile point tools from Owl Creek Site Group by Chert Province and Chert Type.

Chert Province	Lithic Material	Chopper Type A	Chopper Type B	complex scraper	Crushing/Abrading	drill	early stage biface	edge modified	end scraper	finished biface	graver	Hammerstone	late stage biface	middle stage biface	side scraper	spokeshave	stone awl	utilized	Total
		Tool Type																	
Identified Types																			
Cowhouse	18-C Mottled	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
	19-C Dr Gray	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1	3
	22-C Mott/Flecks	1	0	1	1	0	0	0	0	0	0	0	0	1	1	0	0	1	6
	Subtotal	*1*	*1*	*1*	*1*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*1*	*1*	*1*	*0*	*0*	*3*	*11*
North Fort	08-FH Yellow	0	1	0	0	0	4	3	0	2	4	0	9	2	1	6	1	48	81
	11-ER Flat	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
	14-FH Gray	0	0	0	0	0	0	1	0	2	1	0	3	0	0	0	0	15	22
	15-Gry/Brn/Grn	0	1	0	1	1	2	6	0	6	2	0	14	4	2	1	0	78	118
	16-Leona Park	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
	17-Owl Crk Black	0	0	0	0	1	0	2	0	1	0	0	2	0	0	0	0	18	24
	Subtotal	*0*	*2*	*0*	*1*	*2*	*6*	*12*	*0*	*12*	*7*	*0*	*29*	*6*	*3*	*7*	*1*	*161*	*249*
Southeast Range	05-Texas Novac	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	06-HL Tan	3	3	0	1	0	2	8	0	5	0	0	6	1	1	0	0	24	54
	07-Foss Pale Brown	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	2	5
	09-HL Tr Brown	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
	10-HL Blue	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	13-ER Flecked	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	2
	Subtotal	*3*	*3*	*0*	*2*	*0*	*4*	*9*	*0*	*5*	*0*	*0*	*6*	*3*	*2*	*0*	*0*	*28*	*65*
West Fort	03-AM Gray	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Subtotal		***4***	***6***	***1***	***4***	***2***	***10***	***22***	***0***	***17***	***7***	***0***	***36***	***10***	***6***	***7***	***1***	***194***	***327***
Unidentified Types																			
	Indet Dk Brown	0	0	0	0	0	0	2	0	3	1	0	1	1	0	0	0	7	15
	Indet Dk Gray	1	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	3	7
	Indet Lt Brown	0	3	0	0	0	0	0	0	4	2	0	1	1	0	1	0	26	38
	Indet Lt Gray	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	14	17
	Indet Misc.	0	0	0	0	0	0	0	0	0	1	0	2	1	0	3	0	20	27
	Indet Mottled	1	0	1	0	0	1	1	1	0	1	0	2	3	0	0	0	14	25
	Indet White	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Subtotal		***2***	***3***	***1***	***0***	***0***	***1***	***3***	***1***	***8***	***6***	***0***	***8***	***6***	***1***	***5***	***0***	***86***	***131***
Other	Quartzite	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4
Total		**6**	**9**	**2**	**4**	**2**	**11**	**25**	**1**	**25**	**13**	**4**	**44**	**16**	**7**	**12**	**1**	**280**	**462**

Table G-53 Non-projectile point tools from East Henson Site Group by Chert Province and Chert Type.

Chert Province	Lithic Material	Chopper Type B	edge modified	end scraper	finished biface	graver	late stage biface	side scraper	utilized	Total
Identified Types										
North Fort	08-FH Yellow	0	0	0	2	0	0	0	2	4
	14-FH Gray	0	1	0	0	1	0	1	0	3
	Subtotal	*0*	*1*	*0*	*2*	*1*	*0*	*1*	*2*	*7*
Southeast Range	06-HL Tan	1	0	0	0	1	0	0	0	2
	13-ER Flecked	0	0	1	0	0	0	0	0	1
	Subtotal	*1*	*0*	*1*	*0*	*1*	*0*	*0*	*0*	*3*
Subtotal		***1***	***1***	***1***	***2***	***2***	***0***	***1***	***2***	***10***
Unidentified Types										
	Indet Lt Brown	1	0	0	1	0	0	0	0	2
	Indet Misc.	0	0	0	0	0	1	1	0	2
Subtotal		***1***	***0***	***0***	***1***	***0***	***1***	***1***	***0***	***4***
Total		**2**	**1**	**1**	**3**	**2**	**1**	**2**	**2**	**14**

Table G-54 Non-projectile point tools from Shoal/Turnover Site Group by Chert Province and Chert Type.

		Tool Type														
Chert Province	Lithic Material	Chopper Type A	drill	early stage biface	edge modified	finished biface	graver	late stage biface	mano	metate	middle stage biface	other tool	side scraper	spokeshave	utilized	Total
Identified Types																
North Fort	08-FH Yellow	0	0	0	2	2	0	0	0	0	0	0	1	0	6	11
	14-FH Gray	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	15-Gry/Brn/Grn	1	0	1	0	0	0	2	0	0	0	0	0	0	1	5
	Subtotal	*1*	*0*	*1*	*3*	*2*	*0*	*2*	*0*	*0*	*0*	*0*	*1*	*0*	*7*	*17*
Southeast Range	06-HL Tan	0	1	1	3	0	0	1	0	0	2	0	1	1	2	12
	07-Foss Pale Brown	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	09-HL Tr Brown	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
	Subtotal	*0*	*1*	*1*	*4*	*0*	*0*	*1*	*0*	*0*	*2*	*0*	*2*	*1*	*2*	*14*
Subtotal		***1***	***1***	***2***	***7***	***2***	***0***	***3***	***0***	***0***	***2***	***0***	***3***	***1***	***9***	***31***
Unidentified Types																
	Indet Dk Brown	0	0	0	1	0	1	0	0	0	0	1	0	0	1	4
	Indet Lt Brown	0	0	0	3	2	0	2	0	0	0	0	0	0	4	11
	Indet Lt Gray	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
	Indet Misc.	0	0	0	1	0	0	3	0	0	0	0	0	0	2	6
	Indet Mottled	0	0	0	2	0	0	2	0	0	0	0	1	0	2	7
	Indet White	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Subtotal		***0***	***0***	***0***	***7***	***3***	***1***	***7***	***0***	***0***	***0***	***1***	***1***	***0***	***10***	***30***
Other	Limestone	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Quartzite	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	Subtotal	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*1*	*1*	*0*	*0*	*0*	*0*	*0*	*2*
Total		**1**	**1**	**2**	**14**	**5**	**1**	**10**	**1**	**1**	**2**	**1**	**4**	**1**	**19**	**63**

Table G-55 Non-projectile point tools from Shell Mountain Site Group by Chert Province and Chert Type.

		Tool Type																							
Chert Province	Lithic Material	adze	Chopper Type A	Chopper Type B	Clear Fork Type A	Clear Fork Type B	complex scraper	Crushing/Abrading	Denticulate	drill	early stage biface	edge modified	end scraper	finished biface	graver	Hammerstone	late stage biface	middle stage biface	preform	side scraper	spokeshave	uniface	utilized	wedge	Total
Identified Types																									
Cowhouse	18-C Mottled	0	0	1	0	0	0	0	0	0	1	4	1	0	0	0	0	3	0	0	0	0	2	0	12
	19-C Dr Gray	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	1	1	0	0	0	0	3	0	8
	22-C Mott/Flecks	0	1	0	0	1	1	2	0	0	0	3	0	1	0	0	0	4	0	0	1	0	2	0	16
	25-C Br Fleck	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	Subtotal	*0*	*1*	*1*	*0*	*1*	*2*	*2*	*0*	*0*	*1*	*8*	*1*	*2*	*0*	*0*	*1*	*8*	*0*	*0*	*1*	*0*	*8*	*0*	*37*
North Fort	08-FH Yellow	1	0	0	0	0	0	0	0	0	2	3	0	6	1	0	5	3	0	0	0	0	8	0	29
	11-ER Flat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3
	14-FH Gray	0	0	0	0	0	0	1	0	0	1	1	0	1	0	0	1	1	0	0	1	0	2	0	9
	15-Gry/Brn/Grn	0	0	0	0	0	0	0	0	2	0	1	0	2	0	0	3	0	0	0	0	0	3	0	11
	17-Owl Ck Black	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	5	0	1	0	1	0	2	0	12
	Subtotal	*1*	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*2*	*4*	*5*	*0*	*11*	*1*	*0*	*14*	*4*	*1*	*0*	*2*	*0*	*18*	*0*	*64*
Southeast Range	02-C White	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	4	0	7
	06-HL Tan	0	0	0	0	1	0	8	0	3	5	18	5	18	1	0	12	9	1	2	0	0	27	0	110
	07-Foss Pale Brown	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	1	0	0	0	0	0	2	0	7
	09-HL Tr Brown	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	2	0	4
	10-HL Blue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
	13-ER Flecked	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
	Subtotal	*0*	*0*	*0*	*0*	*1*	*0*	*8*	*0*	*3*	*6*	*23*	*5*	*21*	*1*	*0*	*17*	*9*	*1*	*2*	*0*	*0*	*35*	*0*	*132*
West Fort	03-AM Gray	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	3	0	1	0	0	2	0	8
Subtotal		*1*	*1*	*1*	*0*	*2*	*2*	*11*	*0*	*5*	*11*	*36*	*7*	*34*	*2*	*0*	*33*	*24*	*2*	*3*	*3*	*0*	*63*	*0*	*241*
Unidentified Types																									
	Indet Black	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	Indet Dk Brown	0	0	0	1	0	0	0	0	2	0	4	0	4	0	0	8	1	0	1	1	1	10	0	33
	Indet Dk Gray	0	0	0	0	0	0	0	0	1	0	1	1	4	1	0	3	4	1	0	0	0	6	0	22
	Indet Lt Brown	0	1	1	0	0	0	0	0	1	1	6	3	6	2	0	13	3	0	4	3	0	28	1	73
	Indet Lt Gray	0	0	0	0	0	0	0	0	0	1	2	1	0	1	0	3	2	0	0	0	1	7	0	18
	Indet Misc.	0	0	0	0	0	0	0	1	0	0	4	0	0	0	0	2	2	0	1	0	0	6	0	16
	Indet Mottled	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	3	0	0	1	1	0	7	0	15
	Indet Trans	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	Indet White	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	8	0	12
Subtotal		*0*	*2*	*1*	*1*	*0*	*0*	*0*	*1*	*4*	*2*	*20*	*6*	*18*	*4*	*0*	*32*	*12*	*1*	*7*	*5*	*2*	*72*	*1*	*191*
Other	Limestone	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Total		**1**	**3**	**2**	**1**	**2**	**2**	**11**	**1**	**9**	**13**	**56**	**13**	**52**	**6**	**1**	**65**	**36**	**3**	**10**	**8**	**2**	**135**	**1**	**433**

Table G-56 Non-projectile point tools from Stampede Site Group by Chert Province and Chert Type.

		Tool Type											
Chert Province	Lithic Material	Chopper Type B	early stage biface	edge modified	finished biface	graver	late stage biface	mano	middle stage biface	side scraper	spokeshave	utilized	Total
Identified Types													
Cowhouse	18-C Mottled	0	0	1	0	0	0	0	0	0	0	0	1
North Fort	14-FH Gray	0	0	0	0	0	1	0	1	1	0	0	3
	15-Gry/Brn/Grn	0	0	0	0	0	0	0	0	1	0	0	1
	Subtotal	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*1*	*2*	*0*	*0*	*4*
Southeast Range	02-C White	0	0	1	0	1	0	0	0	0	0	0	2
	07-Foss Pale Brown	0	0	1	0	0	0	0	0	0	0	0	1
	Subtotal	*0*	*0*	*2*	*0*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*3*
West Fort	03-AM Gray	0	0	0	1	0	0	0	0	0	0	0	1
Subtotal		***0***	***0***	***3***	***1***	***1***	***1***	***0***	***1***	***2***	***0***	***0***	***9***
Unidentified Types													
	Indet Black	0	0	1	0	0	0	0	0	0	0	0	1
	Indet Lt Brown	1	0	0	0	0	0	0	1	0	1	1	4
	Indet Lt Gray	0	1	0	0	0	0	0	0	0	0	0	1
	Indet Misc.	0	0	0	1	0	0	0	0	0	0	1	2
	Indet Mottled	0	0	0	0	0	0	0	0	0	0	1	1
	Indet White	0	1	0	0	0	2	0	0	0	0	0	3
Subtotal		***1***	***2***	***1***	***1***	***0***	***2***	***0***	***1***	***0***	***1***	***3***	***12***
Other	Quartzite	0	0	0	0	0	0	1	0	0	0	0	1
Total		**1**	**2**	**4**	**2**	**1**	**3**	**1**	**2**	**2**	**1**	**3**	**22**

Table G-57 Non-projectile Point Tools from West Cowhouse Site Group by Chert Province and Chert Type.

Chert Province	Lithic Material	Chopper Type A	Chopper Type B	complex scraper	Crushing/Abrading	drill	early stage biface	edge modified	end scraper	finished biface	graver	Hammerstone	late stage biface	middle stage biface	preform	side scraper	spokeshave	utilized	Total
		Tool Type																	
Identified Types																			
Cowhouse	18-C Mottled	1	0	0	0	0	0	4	0	0	1	0	0	0	0	3	0	2	11
	19-C Dr Gray	0	0	0	2	1	0	3	1	1	0	0	2	0	0	0	0	2	12
	22-C Mott/Flecks	1	1	0	1	0	1	5	1	1	1	0	3	5	0	0	0	4	24
	23-C Mott/Banded	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	24-C Br Fossil	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	27-C Novaculite	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	2
	Subtotal	*2*	*1*	*0*	*4*	*1*	*1*	*14*	*2*	*2*	*2*	*0*	*5*	*5*	*0*	*3*	*0*	*9*	*51*
North Fort	08-FH Yellow	0	0	0	0	0	0	2	0	2	1	0	0	2	0	1	0	6	14
	14-FH Gray	0	2	0	2	0	0	0	0	1	0	0	3	0	0	2	0	3	13
	15-Gry/Brn/Grn	0	0	0	0	1	0	0	0	2	1	0	7	0	0	0	1	3	15
	17-Owl Crk Black	0	0	0	1	0	0	0	0	2	0	0	4	0	0	1	0	2	10
	Subtotal	*0*	*2*	*0*	*3*	*1*	*0*	*2*	*0*	*7*	*2*	*0*	*14*	*2*	*0*	*4*	*1*	*14*	*52*
Southeast Range	02-C White	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
	06-HL Tan	0	1	0	0	3	0	7	1	6	0	1	2	1	0	0	1	16	40
	07-Foss Pale Brown	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	3
	09-HL Tr Brown	0	0	1	0	0	1	3	1	0	1	0	2	3	0	1	1	7	21
	10-HL Blue	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	3
	13-ER Flecked	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2
	Subtotal	*0*	*1*	*2*	*0*	*3*	*2*	*11*	*2*	*7*	*1*	*1*	*5*	*4*	*0*	*1*	*3*	*28*	*72*
West Fort	03-AM Gray	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Subtotal		***2***	***4***	***2***	***7***	***5***	***3***	***27***	***4***	***16***	***5***	***1***	***25***	***11***	***0***	***8***	***4***	***51***	***176***
Unidentified Types																			
	Indet Dk Brown	0	0	0	1	1	0	3	2	3	1	0	0	1	0	2	0	6	20
	Indet Dk Gray	0	0	0	0	0	0	2	0	0	0	0	1	1	0	0	0	7	11
	Indet Lt Brown	0	1	0	1	0	3	3	2	6	2	0	7	0	0	1	1	13	40
	Indet Lt Gray	0	0	0	0	0	1	2	0	3	2	0	0	0	1	0	0	3	12
	Indet Misc.	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4	8
	Indet Mottled	0	0	0	1	0	0	4	0	1	0	0	4	0	0	0	0	6	16
	Indet Trans	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	2
	Indet White	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	3	5
Subtotal		***0***	***1***	***0***	***3***	***1***	***4***	***18***	***4***	***13***	***6***	***0***	***14***	***2***	***1***	***3***	***1***	***43***	***115***
Other	Quartzite	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Total		**2**	**5**	**2**	**10**	**6**	**7**	**45**	**8**	**29**	**11**	**2**	**39**	**13**	**1**	**11**	**5**	**94**	**292**

Table G-58 Non-projectile point tools from Table Rock Site Group by Chert Province and Chert Type.

Chert Province	Lithic Material	Tool Type: Chopper Type II	complex scraper	edge modified	finished biface	late stage biface	mano	metate	middle stage biface	side scraper	spokeshave	utilized	Total
Identified Types													
Cowhouse	18-C Mottled	0	0	1	0	0	0	0	0	0	0	0	1
	19-C Dr Gray	0	0	1	0	0	0	0	0	0	0	0	1
	22-C Mott/Flecks	1	0	0	0	2	0	0	0	0	1	0	4
	Subtotal	*1*	*0*	*2*	*0*	*2*	*0*	*0*	*0*	*0*	*1*	*0*	*6*
North Fort	08-FH Yellow	0	0	0	1	0	0	0	0	0	0	1	2
	14-FH Gray	0	0	0	1	1	0	0	1	0	0	0	3
	15-Gry/Brn/Grn	0	1	0	0	1	0	0	1	0	0	0	3
	Subtotal	*0*	*1*	*0*	*2*	*2*	*0*	*0*	*2*	*0*	*0*	*1*	*8*
Southeast Range	01-HL Blue(l)	0	0	0	0	0	0	0	0	0	0	1	1
	02-C White	0	0	0	0	0	0	0	0	0	0	1	1
	06-HL Tan	0	0	1	0	1	0	0	3	1	0	1	7
	09-HL Tr Brown	0	0	0	0	0	0	0	2	0	0	0	2
	Subtotal	*0*	*0*	*1*	*0*	*1*	*0*	*0*	*5*	*1*	*0*	*3*	*11*
Subtotal		***1***	***1***	***3***	***2***	***5***	***0***	***0***	***7***	***1***	***1***	***4***	***25***
Unidentified Types													
	Indet Dk Brown	0	0	1	0	1	0	0	0	0	0	1	3
	Indet Lt Brown	1	0	3	1	2	0	0	0	0	1	5	13
	Indet Lt Gray	0	0	2	1	1	0	0	0	0	0	0	4
	Indet Misc.	0	0	1	0	0	0	0	0	0	0	1	2
	Indet Mottled	0	0	0	1	0	0	0	0	0	0	2	3
	Indet White	0	0	0	0	1	0	0	0	0	0	0	1
Subtotal		***1***	***0***	***7***	***3***	***5***	***0***	***0***	***0***	***0***	***1***	***9***	***26***
Other	Limestone	0	0	0	0	0	1	1	0	0	0	0	2
Total		**2**	**1**	**10**	**5**	**10**	**1**	**1**	**7**	**1**	**2**	**13**	**53**

Table G-59 Non-projectile point tools from Turkey Run Site Group by Chert Province and Chert Type.

		Tool Type								
Chert Province	Lithic Material	biface	edge modified	finished biface	late stage biface	middle stage biface	side scraper	spokeshave	utilized	Total
Identified Types										
Cowhouse	18-C Mottled	0	0	0	1	0	0	0	0	1
	22-C Mott/Flecks	0	0	0	0	0	1	0	0	1
	Subtotal	*0*	*0*	*0*	*1*	*0*	*1*	*0*	*0*	*2*
North Fort	15-Gry/Brn/Grn	0	0	1	0	0	0	0	0	1
	17-Owl Crk Black	0	0	1	0	0	0	0	0	1
	Subtotal	*0*	*0*	*2*	*0*	*0*	*0*	*0*	*0*	*2*
Southeast Range	06-HL Tan	0	1	0	2	0	0	1	2	6
West Fort	03-AM Gray	1	0	0	1	0	0	0	1	3
Subtotal		***1***	***1***	***2***	***4***	***0***	***1***	***1***	***3***	***13***
Unidentified Types										
	Indet Dk Brown	0	0	0	0	1	1	0	2	4
	Indet Dk Gray	0	0	0	0	0	1	0	1	2
	Indet Lt Brown	0	2	1	2	0	0	0	1	6
	Indet Lt Gray	0	0	0	0	0	0	0	5	5
	Indet Mottled	0	0	0	0	2	0	0	1	3
	Indet White	0	2	0	0	0	0	0	0	2
Subtotal		***0***	***4***	***1***	***2***	***3***	***2***	***0***	***10***	***22***
Total		**1**	**5**	**3**	**6**	**3**	**3**	**1**	**13**	**35**

APPENDIX H

Artifact Data Tables

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Table H-1. Debitage Recovery by Size and Material Type, 41BL431.

Lithic Material	Size (cm) 0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Identified Types							
01-HL Blue(1&10)	0	0	1	1	3	0	5
02-C White	0	0	3	0	0	0	3
03-AM Gray	0	0	3	1	0	0	4
06-HL Tan	9	0	8	1	1	0	19
07-Foss Pale Brown	0	0	0	1	1	0	2
09-HL Tr Brown	0	20	17	11	1	0	49
14-FH Gray	0	0	4	1	0	0	5
15-Gry/Brn/Grn	0	0	1	2	4	0	7
17-Owl Crk Black	0	0	5	0	0	0	5
18-C Mottled	0	0	1	1	3	0	5
20-C Shell Hash	0	0	0	0	0	1	1
Subtotal	*9*	*20*	*43*	*19*	*13*	*1*	*105*
Unidentified Types							
Indet Dk Brown	3	1	6	0	1	0	11
Indet Dk Gray	20	9	4	3	0	0	36
Indet Lt Brown	15	15	12	3	1	0	46
Indet Lt Gray	0	3	16	1	0	0	20
Indet Misc.	4	9	4	13	2	0	32
Indet Mottled	0	1	3	5	5	0	14
Indet Trans	5	1	2	2	0	0	10
Indet White	0	6	3	6	0	0	15
Subtotal	*47*	*45*	*50*	*33*	*9*	*0*	*184*
Total	**56**	**65**	**93**	**52**	**22**	**1**	**289**

Table H-2. Binomial Statistic Results, 41BL431.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
HL Blue (1&10)	5	less	expected
02-C White	3	less	less
03-AM Gray	4	less	expected
06-HL Tan	19	expected	more
07-Foss Pale Brown	2	less	less
09-HL Tr Brown	49	more	more
14-FH Gray	5	less	expected
15-Gry/Brn/Grn	7	less	expected
17-Owl Crk Black	5	less	expected
18-C Mottled	5	less	expected
20-C Shell Hash	1	less	less
Total Indet	184	more	n/a

1. Expected minimum = 13; expected maximum = 31.

2. Expected minimum = 4; expected maximum = 15.

Table H-3. Debitage Cortex Characteristics by Material Type, 41BL431.

Lithic Material	Partial Cortex	Indeterminate	No Cortex	Total
Identified Types				
01-HL Blue(1&10)	2	0	3	5
02-C White	0	0	3	3
03-AM Gray	1	0	3	4
06-HL Tan	2	0	17	19
07-Foss Pale Brown	1	0	1	2
09-HL Tr Brown	2	0	47	49
14-FH Gray	0	0	5	5
15-Gry/Brn/Grn	5	0	2	7
17-Owl Crk Black	1	0	4	5
18-C Mottled	4	0	1	5
20-C Shell Hash	0	0	1	1
Subtotal	*18*	*0*	*87*	*105*
Unidentified Types				
Indet Dk Brown	4	0	7	11
Indet Dk Gray	2	0	34	36
Indet Lt Brown	10	1	35	46
Indet Lt Gray	1	0	19	20
Indet Misc.	11	0	21	32
Indet Mottled	8	0	6	14
Indet Trans	4	0	6	10
Indet White	7	0	8	15
Subtotal	*47*		*136*	*184*
Total	**65**	**1**	**223**	**289**

Table H-4. Lithic Tools, 41BL431.

	Core Type		Tool Type						
Lithic Material	multiple platform	single platform	Chopper Type B	early stage biface	edge modified	finished biface	late stage biface	utilized	Total
06-HL Tan	0	0	0	0	0	0	0	1	1
07-Foss Pale Brown	0	1	0	0	0	0	0	0	1
08-FH Yellow	0	0	0	0	0	0	0	1	1
09-HL Tr Brown	0	0	1	1	0	1	0	1	4
18-C Mottled	1	0	0	0	0	0	0	1	2
Indet Dk Gray	0	0	0	0	0	0	0	1	1
Indet Misc.	0	0	0	0	0	0	0	1	1
Indet Mottled	0	0	0	0	1	1	3	1	6
Indet White	0	0	0	0	0	0	0	1	1
Total	**1**	**1**	**1**	**1**	**1**	**2**	**3**	**8**	**18**

Table H-5. Faunal Recovery, 41BL431.

	Element		
Bivalves	left	right	Total
Amblema plicata	4	1	5
Amblema sp.	1	1	2
Indeterminate/unknown	1	0	1
Lampsilis sp.	0	1	1
Quadrula sp.	2	0	2
Tritigonia verrucosa	0	2	2
Unionacea	2	2	4
Total	**10**	**7**	**17**

Table H-6. Debitage Recovery by Size and Material Type, AU1, 41BL504.

Lithic Material	Size (cm) <0.5	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Identified Types							
03-AM Gray	0	0	0	0	2	0	2
06-HL Tan	0	0	6	3	2	1	12
07-Foss Pale Brown	0	0	0	0	1	1	2
08-FH Yellow	1	1	7	11	0	2	22
10-HL Blue	0	0	0	0	1	1	2
15-Gry/Brn/Grn	0	2	0	3	5	0	10
Subtotal	*1*	*3*	*13*	*17*	*11*	*5*	*50*
Unidentified Types							
Indet Black	0	5	6	0	1	0	12
Indet Dk Brown	0	8	4	6	1	0	19
Indet Dk Gray	0	5	1	1	1	0	8
Indet Lt Brown	6	16	18	12	6	2	60
Indet Lt Gray	0	22	9	14	1	0	46
Indet Misc.	42	82	82	21	3	0	230
Indet Mottled	0	0	1	10	2	2	15
Indet White	0	6	10	3	1	0	20
Subtotal	*48*	*144*	*131*	*67*	*16*	*4*	*410*
Total	**49**	**147**	**144**	**84**	**27**	**9**	**460**

Table H-7. Binomial Statistic Results, AU1, 41BL504.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
03-AM Gray	2	less	less
06-HL Tan	12	less	expected
07-Foss Pale Brown	2	less	less
08-FH Yellow	22	less	more
10-HL Blue	2	less	less
15-Gry/Brn/Grn	10	less	expected
Total Indet	410	more	na

1. Expected minimum = 51; expected maximum = 81.
2. Expected minimum = 4; expected maximum = 14.

Table H-8. Debitage Cortex Characteristics by Material Type, AU1, 41BL504.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
03-AM Gray	1	1	2
06-HL Tan	1	11	12
07-Foss Pale Brown	0	2	2
08-FH Yellow	4	18	22
10-HL Blue	1	1	2
15-Gry/Brn/Grn	5	5	10
Subtotal	*12*	*38*	*50*
Unidentified Types			
Indet Black	0	12	12
Indet Dk Brown	1	18	19
Indet Dk Gray	2	6	8
Indet Lt Brown	14	46	60
Indet Lt Gray	1	45	46
Indet Misc.	20	210	230
Indet Mottled	8	7	15
Indet White	1	19	20
Subtotal	*47*	*363*	*410*
Total	**59**	**401**	**460**

Table H-9. Projectile Points, AU1, 41BL504.

	Point Type			
Lithic Material	Fresno	Other Dart	Scallorn	Total
17-Owl Crk Black	0	0	1	1
Indet Dk Brown	0	1	0	1
Indet Lt Brown	1	0	1	2
Indet Misc.	0	0	1	1
Total	**1**	**1**	**3**	**5**

Table H-10. Lithic Tools, AU1, 41BL504.

	Core Type	Tool Type				
Lithic Material	multiple platform	edge modified	Hammerstone	late stage biface	utilized	Total
02-C White	0	0	0	0	1	1
06-HL Tan	0	0	0	1	1	2
08-FH Yellow	0	0	0	0	1	1
Indet Dk Gray	0	0	0	0	1	1
Indet Lt Brown	0	0	0	1	1	2
Indet Lt Gray	0	1	0	0	1	2
Indet Mottled	2	0	0	0	0	2
Quartzite	0	0	1	0	0	1
Total	**2**	**1**	**1**	**2**	**6**	**12**

Table H-11. Faunal Recovery, AU1, 41BL504.

	Element		
Taxon	Long bone, unident.	right	Total
Vertebrates			
Mammal (small)	1	0	1
Mammal (med/lg)	2	0	2
Mammal (lg/vlg)	4	0	4
Vertebrate-undiffer.	3	0	3
Total	**10**	**0**	**10**
Bivalves			
Toxolasma sp.	0	2	2

Table H-12. Debitage Recovery by Size and Material Type, AU2, 41BL504.

Lithic Material	Size (cm) 0.5 - 0.9	0.9 - 1.2	1.8 - 2.6	2.6 - 5.2	Total
Identified Types					
08-FH Yellow	0	0	0	2	2
Subtotal	*0*	*0*	*0*	*2*	*2*
Unidentified Types					
Indet Dk Brown	2	3	0	0	5
Indet Lt Brown	0	1	1	0	2
Subtotal	*2*	*4*	*1*	*0*	*7*
Total	2	4	1	2	9

Table H-14. Debitage Cortex Characteristics by Material Type, AU2, 41BL504

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
08-FH Yellow	2	0	2
Subtotal	*2*	*0*	*2*
Unidentified Types			
Indet Dk Brown	1	4	5
Indet Lt Brown	0	2	2
Subtotal	*1*	*6*	*7*
Total	3	6	9

Table H-13. Binomial Statistic Results, AU2, 41BL504.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
08-FH Yellow	2	expected	expected
Total Indet	7	expected	na

1. Expected minimum = 2; expected maximum = 7.
2. Expected minimum = 2; expected maximum = 2.

Table H-15. Debitage Recovery by Size and Material Type, 41BL531.

Lithic Material	Size (cm) 0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Identified Types						
06-HL Tan	0	0	2	0	0	2
08-FH Yellow	0	0	0	1	0	1
09-HL Tr Brown	0	0	5	1	0	6
10-HL Blue	0	8	0	0	0	8
15-Gry/Brn/Grn	0	1	0	0	1	2
17-Owl Crk Black	2	0	0	0	0	2
Subtotal	*2*	*9*	*7*	*2*	*1*	*21*
Unidentified Types						
Indet Black	1	0	2	0	0	3
Indet Dk Brown	11	0	0	5	0	16
Indet Dk Gray	2	5	2	0	0	9
Indet Lt Brown	8	11	7	1	0	27
Indet Lt Gray	0	1	0	0	0	1
Indet Misc.	0	0	1	0	0	1
Indet Mottled	0	0	3	0	0	3
Indet Trans	0	2	2	0	0	4
Indet White	0	2	1	0	0	3
Subtotal	*22*	*21*	*18*	*6*	*0*	*67*
Total	24	30	25	8	1	88

Table H-16. Binomial Statistic Results, 41BL531

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
06-HL Tan	2	less	expected
08-FH Yellow	1	less	expected
09-HL Tr Brown	6	expected	expected
10-HL Blue	8	expected	more
15-Gry/Brn/Grn	2	less	expected
17-Owl Crk Black	2	less	expected
Total Indet	67	more	na

1. Expected minimum = 6; expected maximum = 19.

2. Expected minimum = 1; expected maximum = 7.

Table H-17. Debitage Cortex Characteristics by Material Type, 41BL531.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
06-HL Tan	0	2	2
08-FH Yellow	0	1	1
09-HL Tr Brown	0	6	6
10-HL Blue	0	8	8
15-Gry/Brn/Grn	1	1	2
17-Owl Crk Black	0	2	2
Subtotal	*1*	*20*	*21*
Unidentified Types			
Indet Black	1	2	3
Indet Dk Brown	0	16	16
Indet Dk Gray	0	9	9
Indet Lt Brown	1	26	27
Indet Lt Gray	0	1	1
Indet Misc.	0	1	1
Indet Mottled	3	0	3
Indet Trans	0	4	4
Indet White	1	2	3
Subtotal	*6*	*61*	*67*
Total	**7**	**81**	**88**

Table H-18. Faunal Recovery, 41BL531.

Taxon	Element																						Total
	Atlas	Calcaneus	Caudal vertebra	Cranium	Dermal armor	Femur	Humerus	Indeterminate	Long bone, unident.	Mandible	Maxilla	Metapodial	Pelvis	Phalange	Radius	Rib	Scapula	Tibia	Tooth	Ulna	Vertebra	unknown	
Vertebrates																							
Amphibian	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	-	1
Aves (small)	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	-	3
Carnivora	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	-	1
Dasypus novemcinctus	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	1
Didelphis virgiania	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	-	2
Leporidae	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	1
Mammal (small)	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	1	-	4
Mammal (sm/med)	0	0	2	0	0	0	0	1	15	0	0	2	0	5	1	7	0	0	0	1	3	-	37
Mammal (med/lg)	0	0	0	0	0	0	0	1	6	0	0	0	0	0	0	0	0	0	0	0	0	-	7
Mammal (lg/vlg)	0	0	0	0	0	0	0	7	5	0	0	0	0	0	0	0	0	0	0	0	0	-	12
Mammal (very lg)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	-	1
Mephitis mephitis	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	-	3
Odocoileus sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	-	1
Osteichthyes (small)	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	-	1
Serpentes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	-	4
Sylvilagus sp.	0	1	0	0	0	1	0	0	0	1	1	0	1	0	0	0	1	1	0	0	0	-	7
Tayassuidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	-	1
Vertebrate-undiffer.	0	0	0	0	0	0	0	16	2	0	0	0	0	0	0	0	0	0	0	0	0	-	18
Total	1	1	2	1	1	3	1	27	28	2	1	2	2	9	1	8	1	3	2	1	8	-	105
Bivalves																							
Unionacea	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1

Table H-19. Debitage Recovery by Size and Material Type, AU1, 41BL560.

Lithic Material	Size (cm) < 0.5	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Identified Types								
02-C White	0	1	0	3	2	5	0	11
03-AM Gray	0	0	0	0	1	0	0	1
08-FH Yellow	0	1	1	3	0	0	1	6
10-HL Blue	0	0	1	3	0	0	0	4
11-ER Flat	0	1	0	0	0	0	0	1
14-FH Gray	0	1	2	2	0	0	0	5
15-Gry/Brn/Grn	0	0	1	2	0	0	0	3
17-Owl Crk Black	0	0	2	0	0	0	0	2
Subtotal	*0*	*4*	*7*	*13*	*3*	*5*	*1*	*33*
Unidentified Types								
Indet Dk Brown	0	0	4	3	2	0	0	9
Indet Dk Gray	1	2	6	2	1	1	0	13
Indet Lt Brown	12	11	19	9	5	0	0	56
Indet Lt Gray	0	0	5	7	1	1	1	15
Indet Misc.	0	1	7	8	0	0	0	16
Indet Mottled	0	0	0	1	2	0	0	3
Indet Trans	1	0	0	1	0	0	0	2
Indet White	0	1	6	3	0	0	0	10
Subtotal	*14*	*15*	*47*	*34*	*11*	*2*	*1*	*124*
Total	**14**	**19**	**54**	**47**	**14**	**7**	**2**	**157**

Table H-20. Binomial Statistic Results, AU1, 41BL560.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
02-C White	11	expected	more
03-AM Gray	1	less	expected
08-FH Yellow	6	less	expected
10-HL Blue	4	less	expected
11-ER Flat	1	less	expected
14-FH Gray	5	less	expected
15-Gry/Brn/Grn	3	less	expected
17-Owl Crk Black	2	less	expected
Total Indet	124	more	na

1. Expected minimum = 8; expected maximum = 23.

2. Expected minimum = 1; expected maximum = 7.

Table H-21. Debitage Cortex Characteristics by Material Type, AU1, 41BL560.

Lithic Material	All Cortex	Partial Cortex	No Cortex	Total
Identified Types				
02-C White	0	4	7	11
03-AM Gray	0	0	1	1
08-FH Yellow	0	2	4	6
10-HL Blue	0	0	4	4
11-ER Flat	0	0	1	1
14-FH Gray	0	0	5	5
15-Gry/Brn/Grn	0	3	0	3
17-Owl Crk Black	0	1	1	2
Subtotal	*0*	*10*	*23*	*33*
Unidentified Types				
Indet Dk Brown	0	0	9	8
Indet Dk Gray	0	6	7	13
Indet Lt Brown	0	3	53	56
Indet Lt Gray	0	6	9	15
Indet Misc.	2	2	12	16
Indet Mottled	0	2	1	3
Indet Trans	0	0	2	2
Indet White	0	3	7	10
Subtotal	*2*	*22*	*100*	*123*
Total	**2**	**32**	**123**	**157**

Table H-22. Lithic Tools, AU1, 41BL560.

	Core Type	Tool Type		
Lithic Material	multiple platform	spokeshave	utilized	Total
15-Gry/Brn/Grn	0	0	1	1
Indet Lt Brown	1	1	1	3
Indet Mottled	0	1	1	2
Indet White	0	0	1	1
Total	1	2	4	7

Table H-23. Faunal Recovery, AU1, 41BL560.

	Element		
Taxon	Indeterminate	Long bone, unident.	Total
Vertebrates			
Mammal (med/lg)	0	2	2
Mammal (lg/vlg)	0	3	3
Vertebrate-undiffer.	1	0	1
Total	1	5	6

Table H-24. Debitage Recovery by Size and Material Type, AU2, 41BL560.

	Size (cm)							
Lithic Material	< 0.5	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Identified Types								
01-HL Blue(l)	0	1	0	1	0	1	2	5
02-C White	0	0	0	3	1	1	1	6
08-FH Yellow	0	0	2	0	0	0	0	2
15-Gry/Brn/Grn	0	0	0	0	0	1	0	1
17-Owl Crk Black	0	1	2	0	1	0	0	4
Subtotal	*0*	*2*	*4*	*4*	*2*	*3*	*3*	*18*
Unidentified Types								
Indet Black	1	0	0	0	0	0	0	1
Indet Dk Brown	0	0	1	0	0	0	0	1
Indet Dk Gray	6	4	4	1	0	0	2	17
Indet Lt Brown	6	10	2	5	2	3	1	29
Indet Lt Gray	2	7	5	3	1	0	1	19
Indet Misc.	0	3	0	1	0	0	0	4
Indet Mottled	0	2	2	3	1	2	0	10
Indet White	1	3	3	4	2	1	0	14
Subtotal	*16*	*29*	*17*	*17*	*6*	*6*	*4*	*95*
Total	16	31	21	21	8	9	7	113

Table H-25. Binomial Statistic Results, AU2, 41BL560.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
01-HL Blue(l)	5	less	expected
02-C White	6	less	expected
08-FH Yellow	2	less	expected
15-Gry/Brn/Grn	1	less	expected
17-Owl Crk Black	4	less	expected
Total Indet	95	more	na

1. Expected minimum = 11; expected maximum = 27.

2. Expected minimum = 1; expected maximum = 7.

Table H-26. Debitage Cortex Characteristics by Material Type, AU2, 41BL560

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
01-HL Blue(l)	1	4	5
02-C White	4	2	6
08-FH Yellow	1	1	2
15-Gry/Brn/Grn	1	0	1
17-Owl Crk Black	0	4	4
Subtotal	*7*	*11*	*18*
Unidentified Types			
Indet Black	0	1	1
Indet Dk Brown	0	1	1
Indet Dk Gray	1	16	17
Indet Lt Brown	3	26	29
Indet Lt Gray	4	15	19
Indet Misc.	0	4	4
Indet Mottled	4	6	10
Indet White	6	8	14
Subtotal	*18*	*77*	*95*
Total	**25**	**88**	**113**

Table H-27. Faunal Recovery, AU2, 41BL560.

Taxon	Element													Total
	Cervical vertebra	Cranium	Dermal armor	Humerus	Indeterminate	Long bone, unident.	Metapodial	Rib	Scapula	Tibia	Tooth	Vertebra	unknown	
Vertebrates														
Aves (large)	0	0	0	1	0	0	0	0	0	0	0	0	-	1
Bos/Bison	0	0	0	0	0	0	0	0	0	0	1	0	-	1
Dasypus novemcinctus	0	0	1	0	0	0	0	0	0	0	0	0	-	1
Felis rufus	0	0	0	1	0	0	0	0	0	0	0	0	-	1
Leporidae	0	0	0	0	0	0	0	0	0	1	0	0	-	1
Lepus californicus	1	0	0	0	0	0	0	0	0	0	0	0	-	1
Mammal (sm/med)	0	3	0	0	0	4	0	0	0	0	0	1	-	8
Mammal (med/lg)	0	0	0	0	1	4	0	0	0	0	0	0	-	5
Mammal (lg/vlg)	0	1	0	0	4	9	0	1	0	0	0	1	-	16
Mammal (very lg)	0	0	0	0	0	0	0	0	0	0	3	0	-	3
Mustelidae	0	0	0	0	0	0	0	0	0	0	1	0	-	1
Odocoileus sp.	0	0	0	0	0	0	0	0	0	0	2	0	-	2
Serpentes	0	0	0	0	0	0	0	0	0	0	0	1	-	1
Sus scrofa	0	0	0	0	0	0	1	0	1	0	0	0	-	2
Vertebrate-undiffer.	0	0	0	0	4	1	0	0	0	0	0	0	-	5
Total	1	4	1	2	9	18	1	1	1	1	7	3	-	49
Bivalves														
Unionacea	0	0	0	0	0	0	0	0	0	0	0	0	1	1

Table H-28. Debitage Recovery by Size and Material Type, AU1, 41BL773.

	Size (cm)						
Lithic Material	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Identifed Types							
02-C White	1	0	0	1	0	0	2
06-HL Tan	0	0	0	1	1	0	2
07-Foss Pale Brown	0	0	0	1	10	0	11
09-HL Tr Brown	0	0	0	0	1	0	1
10-HL Blue	0	0	1	2	1	0	4
14-FH Gray	0	1	0	0	0	0	1
18-C Mottled	0	1	1	0	0	0	2
22-C Mott/Flecks	0	0	0	1	0	0	1
Subtotal	*1*	*2*	*2*	*6*	*13*	*0*	*24*
Unidentifed Types							
Indet Black	0	0	0	0	1	0	1
Indet Dk Brown	4	5	1	1	0	0	11
Indet Dk Gray	16	8	5	2	0	0	31
Indet Lt Brown	15	13	16	11	2	0	57
Indet Lt Gray	5	5	0	1	1	0	12
Indet Misc.	5	4	3	1	0	0	13
Indet Mottled	0	5	5	3	0	1	14
Indet Trans	0	2	1	0	0	0	3
Indet White	7	5	7	4	1	0	24
Subtotal	*52*	*47*	*38*	*23*	*5*	*1*	*166*
Total	**53**	**49**	**40**	**29**	**18**	**1**	**190**

Table H-29. Binomial Statistic Results, AU1, 41BL773.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
02-C White	2	less	expected
06-HL Tan	2	less	expected
07 Foss Pale Brown	11	expected	more
09-HL Tr Brown	1	less	expected
10-HL Blue	4	less	expected
14-FH Gray	1	less	expected
18-C Mottled	2	less	expected
22-C Mott/Flecks	1	less	expected
Total Indet	166	more	na

1. Expected minimum = 10; expected maximum = 26.
2. Expected minimum = 0; expected maximum = 6.

Table H-30. Debitage Cortex Characteristics by Material Type, AU1, 41BL773.

Lithic Material	Partial Cortex	Indeterminate	No Cortex	Total
Identified Types				
02-C White	1	0	1	2
06-HL Tan	0	0	2	2
07-Foss Pale Brown	10	0	1	11
09-HL Tr Brown	1	0	0	1
10-HL Blue	0	0	4	4
14-FH Gray	0	0	1	1
18-C Mottled	0	0	2	2
22-C Mott/Flecks	0	0	1	1
Subtotal	*12*	*0*	*12*	*24*
Unidentified Types				
Indet Black	1	0	0	1
Indet Dk Brown	2	0	9	11
Indet Dk Gray	3	0	28	31
Indet Lt Brown	15	1	41	57
Indet Lt Gray	2	0	10	12
Indet Misc.	9	1	3	13
Indet Mottled	12	0	2	14
Indet Trans	1	0	2	3
Indet White	11	3	10	24
Subtotal	*56*	*5*	*105*	*166*
Total	**68**	**5**	**117**	**190**

Table H-31. Projectile Points, AU1, 41BL773.

	Point Type			
Lithic Material	Bonham	Other Arrow	Perdiz	Total
Indet Dk Gray	0	1	0	1
Indet Lt Brown	0	0	1	1
Indet Mottled	1	0	0	1
Total	**1**	**1**	**1**	**3**

Table H-32. Lithic Tools, AU1, 41BL773.

	Tool Type		
Lithic Material	edge modified	utilized	Total
Indet Lt Brown	2	1	3
Indet Lt Gray	0	1	1
Indet Trans	0	1	1
Total	**2**	**3**	**5**

Table H-33. Faunal Recovery, AU1, 41BL773.

	Element					
Taxon	Indeterminate	Long bone, unident.	Pelvis	Rib	Tooth	Total
Vertebrates						
Artiodactyls (med)	0	0	1	0	0	1
Bos/Bison	0	0	0	0	1	1
Leporidae	0	1	0	0	0	1
Mammal (sm/med)	2	3	0	0	0	5
Mammal (med/lg)	2	4	0	2	0	8
Mammal (lg/vlg)	7	3	0	1	2	13
Mammal (unk. size)	1	0	0	0	0	1
Total	**12**	**11**	**1**	**3**	**3**	**30**

Table H-34. Debitage Recovery by Size and Material Type, AU2, 41BL773.

	Size (cm)						
Lithic Material	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Identified Types							
02-C White	0	0	2	0	0	0	2
07-Foss Pale Brown	0	1	0	0	1	0	2
08-FH Yellow	0	1	0	0	0	0	1
09-HL Tr Brown	0	0	1	0	0	0	1
17-Owl Crk Black	0	0	1	0	0	0	1
18-C Mottled	0	0	0	1	1	0	2
Subtotal	*0*	*2*	*4*	*1*	*2*	*0*	*9*
Unidentified Types							
Indet Black	3	4	0	1	0	0	8
Indet Dk Brown	5	16	9	3	0	0	33
Indet Dk Gray	2	7	8	3	3	0	23
Indet Lt Brown	16	39	13	5	4	0	77
Indet Lt Gray	16	16	13	5	0	0	50
Indet Misc.	0	18	3	0	0	0	21
Indet Mottled	1	2	4	6	4	1	18
Indet Trans	0	0	2	0	0	0	2
Indet White	0	3	0	0	0	0	3
Subtotal	*43*	*105*	*52*	*23*	*11*	*1*	*235*
Total	**43**	**107**	**56**	**24**	**13**	**1**	**244**

Table H-35. Binomial Statistic Results, AU2, 41BL773.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
02-C White	2	less	expected
07-Foss Pale Brown	2	less	expected
08-FH Yellow	1	less	expected
09-HL Tr Brown	1	less	expected
17-Owl Crk Black	1	less	expected
18-C Mottled	2	less	expected
Total Indet	235	more	na

1. Expected minimum = 24; expected maximum = 46.
2. Expected minimum = 0; expected maximum = 4.

Table H-36. Debitage Cortex Characteristics by Material Type, AU2, 41BL773.

Lithic Material	Partial Cortex	Indeterminate	No Cortex	Total
Identified Types				
02-C White	0	0	2	2
07-Foss Pale Brown	1	0	1	2
08-FH Yellow	0	0	1	1
09-HL Tr Brown	1	0	0	1
17-Owl Crk Black	0	0	1	1
18-C Mottled	2	0	0	2
Subtotal	*4*	*0*	*5*	*9*
Unidentified Types				
Indet Black	1	0	7	8
Indet Dk Brown	1	0	32	33
Indet Dk Gray	1	0	22	23
Indet Lt Brown	6	0	71	77
Indet Lt Gray	2	0	48	50
Indet Misc.	2	4	15	21
Indet Mottled	9	0	9	18
Indet Trans	0	0	2	2
Indet White	0	0	3	3
Subtotal	*22*	*4*	*209*	*235*
Total	**26**	**4**	**214**	**244**

Table H-37. Faunal Recovery, AU2, 41BL773.

	Element				
Taxon	Indeterminate	Long bone, unident.	Rib	Tibia	Total
Vertebrates					
Leporidae	0	0	0	1	1
Mammal (sm/med)	0	4	0	0	4
Mammal (medium)	0	1	0	0	1
Mammal (med/lg)	2	3	0	0	5
Mammal (lg/vlg)	0	4	3	0	7
Sylvilagus sp.	0	0	0	1	1
Total	**2**	**12**	**3**	**2**	**19**

Table H-38. Debitage Recovery by Size and Material Type, AU3, 41BL773.

	Size (cm)				
Lithic Material	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	Total
Identified Types					
10-HL Blue	0	1	0	1	2
Subtotal	*0*	*1*	*0*	*1*	*2*
Unidentified Types					
Indet Dk Gray	0	2	0	1	3
Indet Lt Brown	0	2	1	2	5
Indet Lt Gray	0	2	4	1	7
Indet Misc.	2	0	2	0	4
Indet Mottled	0	2	0	3	5
Indet Trans	0	1	0	0	1
Indet White	0	1	0	0	1
Subtotal	*2*	*10*	*7*	*7*	*26*
Total	**2**	**11**	**7**	**8**	**28**

Table H-39. Debitage Cortex Characteristics by Material Type, AU3, 41BL773.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
10-HL Blue	0	2	2
Subtotal	*0*	*2*	*2*
Unidentified Types			
Indet Dk Gray	0	3	3
Indet Lt Brown	1	4	5
Indet Lt Gray	1	6	7
Indet Misc.	2	2	4
Indet Mottled	3	2	5
Indet Trans	0	1	1
Indet White	1	0	1
Subtotal	*8*	*18*	*26*
Total	**8**	**20**	**28**

Table H-40. Debitage Recovery by Size and Material Type, AU1, 41BL844.

Lithic Material	Size (cm) <0.5	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Identified Types								
HL Blue (1&10)	0	59	91	72	51	37	2	312
02-C White	2	0	0	4	2	8	0	16
03-AM Gray	0	0	1	0	10	0	0	11
06-HL Tan	0	48	56	29	48	11	2	194
07-Foss Pale Brown	0	0	0	0	0	1	0	1
08-FH Yellow	0	2	3	1	0	0	0	6
09-HL Tr Brown	17	44	58	42	18	9	1	189
14-FH Gray	0	0	0	8	9	0	0	17
17-Owl Crk Black	1	6	1	6	0	0	0	14
18-C Mottled	0	0	9	0	0	0	0	9
23-C Mott/Banded	0	0	0	0	0	1	0	1
Subtotal	*20*	*159*	*219*	*162*	*138*	*67*	*5*	*770*
Unidentified Types								
Indet Black	1	5	0	4	0	0	0	10
Indet Dk Brown	70	96	50	22	3	1	0	242
Indet Dk Gray	67	59	92	45	9	3	0	275
Indet Lt Brown	243	179	118	74	15	4	1	634
Indet Lt Gray	43	124	108	67	49	7	0	398
Indet Misc.	20	91	79	23	16	0	0	229
Indet Mottled	0	1	1	10	6	2	1	21
Indet Trans	24	24	28	12	0	0	0	88
Indet White	33	80	41	29	7	1	0	191
Subtotal	*501*	*659*	*517*	*286*	*105*	*18*	*2*	*2088*
Total	521	818	736	448	243	85	7	2858

Table H-41. Binomial Statistic Results, AU1, 41BL844.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
HL Blue (1 & 10)	312	more	more
02-C White	16	less	less
03-AM Gray	11	less	less
06-HL Tan	194	less	more
07-Foss Pale Brown	1	less	less
08-FH Yellow	6	less	less
09-HL Tr Brown	189	less	more
14-FH Gray	17	less	less
17-Owl Crk Black	14	less	less
18-C Mottled	9	less	less
23-C Mott/Banded	1	less	less
Total Indet	2088	more	na

1. Expected minimum = 208; expected maximum = 266.

2. Expected minimum = 54; expected maximum = 86.

Table H-42. Debitage Cortex Characteristics by Material Type, AU1, 41BL844.

Lithic Material	All Cortex	Partial Cortex	Indeterminate	No Cortex	Total
Identified Types					
HL Blue (1 & 10)	0	23	0	289	312
02-C White	0	5	2	9	16
03-AM Gray	0	2	0	9	11
06-HL Tan	0	19	0	175	194
07-Foss Pale Brown	0	0	0	1	1
08-FH Yellow	0	0	0	6	6
09-HL Tr Brown	0	15	0	174	189
14-FH Gray	0	2	0	15	17
17-Owl Crk Black	0	1	0	13	14
18-C Mottled	0	0	0	9	9
23-C Mott/Banded	0	1	0	0	1
Subtotal	*0*	*68*	*2*	*700*	*770*
Unidentified Types					
Indet Black	1	1	0	8	10
Indet Dk Brown	1	13	0	228	242
Indet Dk Gray	1	22	2	250	275
Indet Lt Brown	2	61	0	571	634
Indet Lt Gray	0	[illegible]	0	372	398
Indet Misc.	3	87	28	111	229
Indet Mottled	1	5	0	15	21
Indet Trans	0	8	0	80	88
Indet White	0	12	0	179	191
Subtotal	*9*	*235*	*30*	*1814*	*2088*
Total	**9**	**303**	**32**	**2514**	**2858**

Table H-43. Projectile Points, AU1, 41BL844

	Point Type				
Lithic Material	Bonham	Darl	Other Arrow	Scallorn	Total
06-HL Tan	0	0	1	0	1
Indet Dk Brown	0	1	0	1	2
Indet Dk Gray	0	0	1	1	2
Indet Lt Brown	0	0	1	0	1
Indet Misc.	0	0	1	0	1
Indet Mottled	0	0	0	1	1
Indet White	1	0	0	3	4
Total	**1**	**1**	**4**	**6**	**12**

Table H-44. Lithic Tools, AU1, 41BL844.

	Core Type	Tool Type								
Lithic Material	multiple platform	edge modified	finished biface	Hammerstone	late stage biface	middle stage biface	side scraper	spokeshave	utilized	Total
02-C White	0	0	0	0	0	0	0	0	1	1
06-HL Tan	0	1	2	0	0	0	1	0	2	6
09-HL Tr Brown	0	0	0	0	0	1	0	0	0	1
14-FH Gray	1	0	0	0	0	0	0	0	0	1
18-C Mottled	0	1	0	0	0	0	0	0	0	1
22-C Mott/Flecks	0	1	0	0	0	0	0	0	0	1
Indet Lt Brown	0	1	1	0	1	1	0	0	1	5
Indet Lt Gray	0	0	0	0	0	0	0	1	1	2
Indet Misc.	0	0	0	0	0	1	0	0	1	2
Indet White	0	0	0	0	0	0	0	0	1	1
Quartzite	0	0	0	1	0	0	0	0	0	1
Total	**1**	**4**	**3**	**1**	**1**	**3**	**1**	**1**	**7**	**22**

Table H-45. Faunal Recovery, AU1, 41BL844.

	Element																		
Taxon	Calcaneus	Caudal vertebra	Humerus	Indeterminate	Long bone, unident.	Mandible	Maxilla	Metatarsal	Pelvis	Permanent tooth	Phalange	Rib	Scapula	Sternum	Tooth	left	right	unknown	Total
Vertebrates																			
Antilocapra americana	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	-	-	-	1
Artiodactyls (med)	0	0	1	0	0	0	0	1	1	0	2	0	0	0	0	-	-	-	5
Aves (unk. size)	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	-	-	-	1
Bos/Bison	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	-	-	-	1
Falconiformes	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	-	-	-	1
Lepus californicus	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	-	-	-	1
Mammal (small)	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	-	-	-	3
Mammal (sm/med)	0	1	0	1	22	0	0	0	0	0	0	0	0	0	0	-	-	-	24
Mammal (medium)	0	0	0	1	8	0	0	0	0	0	0	0	0	0	0	-	-	-	9
Mammal (med/lg)	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	-	-	-	4
Mammal (lg/vlg)	0	0	0	13	103	0	0	0	0	0	0	4	0	0	1	-	-	-	121
Mammal (very lg)	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	-	-	-	1
Mammal (unk. size)	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	-	-	-	2
Odocoileus sp.	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	-	-	-	3
Rodent (medium)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	-	-	-	1
Sylvilagus sp.	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	-	-	-	2
Vertebrate-undiffer.	0	0	0	29	0	0	0	0	0	0	0	0	0	0	0	-	-	-	29
Total	**1**	**1**	**1**	**49**	**136**	**2**	**1**	**1**	**1**	**1**	**3**	**6**	**1**	**1**	**4**	**-**	**-**	**-**	**209**
Bivalves																			
Cyrtonaias sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	2	0	2
Lamsilis hydiana	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	0	2
Unionacea	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	5	6
Total	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**3**	**5**	**10**

Table H-46. Debitage Recovery by Size and Material Type, AU2, 41BL844.

	Size (cm)							
Lithic Material	< 0.5	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Identified Types								
HL Blue (1 & 10)	3	0	14	8	3	3	1	32
02-C White	0	0	1	0	1	0	0	2
03-AM Gray	0	0	1	0	0	0	0	1
04-7 Mile Novac	0	0	4	0	0	0	0	4
06-HL Tan	9	40	28	7	6	2	0	92
09-HL Tr Brown	0	20	6	8	5	1	0	40
14-FH Gray	0	0	1	0	0	0	0	1
17-Owl Crk Black	0	1	0	0	1	0	0	2
22-C Mott/Flecks	0	0	0	2	0	0	0	2
Subtotal	*12*	*61*	*55*	*25*	*16*	*6*	*1*	*176*
Unidentified Types								
Indet Black	0	1	6	2	0	0	0	9
Indet Dk Brown	9	93	17	19	1	1	0	140
Indet Dk Gray	32	37	35	21	2	0	0	127
Indet Lt Brown	140	160	53	37	8	0	0	398
Indet Lt Gray	86	68	2	7	0	0	0	163
Indet Misc.	30	40	26	24	13	0	0	133
Indet Mottled	0	0	2	2	2	1	0	7
Indet Trans	0	0	3	0	0	0	0	3
Indet White	16	11	15	8	2	0	0	52
Subtotal	*313*	*410*	*159*	*120*	*28*	*2*	*0*	*1032*
Total	**325**	**471**	**214**	**145**	**44**	**8**	**1**	**1208**

Table H-47. Binomial Statistic Results, AU2, 41BL844.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
HL Blue (1 & 10)	32	less	more
02-C White	2	less	less
03-AM Gray	1	less	less
04-7 Mile Novac	4	less	less
06-HL Tan	92	less	more
09-HL Tr Brown	40	less	more
14-FH Gray	1	less	less
17-Owl Crk Black	2	less	less
22-C Mott/Flecks	2	less	less
Total Indet	1032	more	na

1. Expected minimum = 100; expected maximum = 141.
2. Expected minimum = 11; expected maximum = 28.

Table H-48. Debitage Cortex Characteristics by Material Type, AU2, 41BL844.

Lithic Material	All Cortex	Partial Cortex	Indeterminate	No Cortex	Total
Identified Types					
HL Blue (1 & 10)	0	2	0	30	32
02-C White	0	1	0	1	2
03-AM Gray	0	0	1	0	1
04-7 Mile Novac	0	0	0	4	4
06-HL Tan	0	5	0	87	92
09-HL Tr Brown	0	5	0	35	40
14-FH Gray	0	0	0	1	1
17-Owl Crk Black	0	0	0	2	2
22-C Mott/Flecks	0	1	0	1	2
Subtotal	*0*	*14*	*1*	*161*	*176*
Unidentified Types					
Indet Black	0	2	0	7	9
Indet Dk Brown	0	2	0	138	140
Indet Dk Gray	0	12	11	104	127
Indet Lt Brown	0	10	0	388	398
Indet Lt Gray	0	3	0	160	163
Indet Misc.	4	37	0	92	133
Indet Mottled	0	3	0	4	7
Indet Trans	0	0	0	3	3
Indet White	0	4	5	43	52
Subtotal	*4*	*73*	*16*	*939*	*1032*
Total	**4**	**87**	**17**	**1100**	**1208**

Table H-49. Projectile Points, AU2, 41BL844.

	Point Type			
Lithic Material	Darl	Other Arrow	Scallorn	Total
17-Owl Crk Black	1	0	0	1
Indet Dk Brown	0	0	2	2
Indet Lt Brown	0	2	0	2
Indet White	0	1	0	1
Total	1	3	2	6

Table H-50. Lithic Tools, AU2, 41BL844.

	Core Type	Tool Type						
Lithic Material	single platform	Chopper Type B	complex scraper	edge modified	finished biface	late stage biface	utilized	Total
06-HL Tan	0	0	0	2	0	0	2	4
09-HL Tr Brown	0	0	1	0	0	0	0	1
14-FH Gray	0	1	0	0	0	0	0	1
23-C Mott/Banded	0	0	0	0	0	1	0	1
Indet Dk Gray	1	0	0	0	0	0	1	2
Indet Lt Brown	0	0	0	0	1	0	4	5
Indet Lt Gray	0	0	0	1	0	1	0	2
Total	1	1	1	3	1	2	7	16

Table H-51. Faunal Recovery, AU2, 41BL844.

	Element																				
Taxon	Antler	Cranium	Femur	Humerus	Indeterminate	Long bone, unident.	Mandible	Metatarsal	Pelvis	Permanent tooth	Phalange	Radial carpal	Radius	Rib	Scapula	Tibia	Ulna	Vertebra	left	unknown	Total
Vertebrates																					
Antilocapra americana	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	-	-	1
Artiodactyls (med)	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	-	-	2
Aves (small)	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	-	-	1
Didelphis virgiania	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	-	-	2
Leporidae	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	1
Mammal (micro/s)	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	2
Mammal (small)	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	-	-	3
Mammal (sm/med)	0	0	0	0	4	13	1	0	0	0	0	0	0	0	0	1	0	0	-	-	19
Mammal (medium)	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	-	-	2
Mammal (med/lg)	0	0	0	1	5	7	0	0	0	0	0	0	0	0	0	0	0	0	-	-	13
Mammal (lg/vlg)	0	0	0	0	8	50	0	0	0	0	0	0	0	6	0	0	0	1	-	-	65
Mammal (very lg)	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	-	-	1
Mammal (unk. size)	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	3
Neotoma sp.	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	1
Odocolieus sp.	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	-	-	3
Osteichthyes (sm)	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	1
Procyon lotor	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	-	-	2
Rodent (sm/med)	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	-	-	2
Rodent (medium)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	-	-	1
Serpentes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	-	-	2
Sylvilagus sp.	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	-	-	2
Vertebrate-undiffer.	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	13
Total	1	1	3	2	34	75	3	1	1	2	1	1	1	8	2	1	1	4	-	-	142
Bivalves																					
Unionacea	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	3

Table H-52. Debitage Recovery by Size and Material Type, AU3, 41BL844.

Lithic Material	Size (cm) < 0.5	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Identified Types								
HL Blue (1& 10)	0	8	10	15	17	8	0	58
02-C White	0	0	1	0	0	0	0	1
03-AM Gray	0	0	0	1	0	0	0	1
06-HL Tan	0	3	2	22	10	3	0	40
08-FH Yellow	0	0	0	1	0	0	0	1
09-HL Tr Brown	0	2	11	43	21	8	0	85
13-ER Flecked	0	0	0	2	0	1	0	3
17-Owl Crk Black	0	0	2	0	0	0	0	2
Subtotal	*0*	*13*	*26*	*84*	*48*	*20*	*0*	*191*
Unidentified Types								
Indet Black	0	1	0	2	0	0	0	3
Indet Dk Brown	37	9	21	16	3	0	0	86
Indet Dk Gray	17	30	14	16	3	2	0	82
Indet Lt Brown	13	100	45	21	13	1	0	193
Indet Lt Gray	0	6	9	21	6	5	1	48
Indet Misc.	16	12	9	41	5	1	0	84
Indet Mottled	0	0	16	0	2	0	0	18
Indet Trans	0	19	23	3	0	1	0	46
Indet White	9	5	1	8	3	2	0	28
Subtotal	*92*	*182*	*138*	*128*	*35*	*12*	*1*	*588*
Total	92	195	164	212	83	32	1	779

Table H-53. Binomial Statistic Results, AU3, 41BL844.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
HL Blue (1 & 10)	58	less	more
02-C White	1	less	less
03-AM Gray	1	less	less
06-HL Tan	40	less	more
08-FH Yellow	1	less	less
09-HL Tr Brown	85	expected	more
13-ER Flecked	3	less	less
17-Owl Crk Black	2	less	less
Total Indet	588	more	na

1. Expected minimum = 61; expected maximum = 94.
2. Expected minimum = 12; expected maximum = 28.

Table H-54. Debitage Cortex Characteristics by Material Type, AU3, 41BL844.

Lithic Material	All Cortex	Partial Cortex	Indeterminante	No Cortex	Total
Identified Types					
HL Blue (1 & 10)	1	9	0	48	58
02-C White	0	0	0	1	1
03-AM Gray	0	0	0	1	1
06-HL Tan	0	5	0	35	40
08-FH Yellow	0	1	0	0	1
09-HL Tr Brown	1	9	1	74	85
13-ER Flecked	0	0	0	3	3
17-Owl Crk Black	0	0	0	2	2
Subtotal	*2*	*24*	*1*	*164*	*191*
Unidentified Types					
Indet Black	0	2	0	1	3
Indet Dk Brown	0	5	0	81	86
Indet Dk Gray	0	3	0	79	82
Indet Lt Brown	1	25	0	167	193
Indet Lt Gray	0	11	0	37	48
Indet Misc.	0	20	0	64	84
Indet Mottled	0	4	0	14	18
Indet Trans	0	1	0	45	46
Indet White	0	4	0	24	28
Subtotal	*1*	*75*	*0*	*512*	*588*
Total	3	99	1	676	779

Table H-55. Lithic Tools, AU3, 41BL844.

	Tool Type								
Lithic Material	Chopper Type A	early stage biface	edge modified	finished biface	graver	late stage biface	middle stage biface	utilized	Total
06-HL Tan	1	0	0	1	0	0	1	2	5
09-HL Tr Brown	0	1	0	0	1	0	0	3	5
Indet Dk Gray	0	0	1	0	0	0	0	0	1
Indet Lt Brown	0	0	0	0	0	0	0	2	2
Indet Lt Gray	0	0	0	0	0	1	0	0	1
Indet White	0	0	0	0	0	0	0	1	1
Total	1	1	1	1	1	1	1	8	15

Table H-56. Faunal Recovery, AU3, 41BL844.

Taxon	Element: Antler	Atlas	Calcaneus	Cranium	Femur	Humerus	Indeterminate	Long bone, unident.	Mandible	Maxilla	Metacarpal	Metapodial	Metatarsal	Pelvis	Phalange	Radius	Rib	Tibia	Tooth	Ulna	Vertebra	unknown	Total
Vertebrates																							
Artiodactyla	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	-	1
Artiodactyls (med)	0	0	1	4	1	1	0	0	0	0	1	5	3	5	0	1	0	0	1	2	1	-	26
Aves (large)	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	-	1
Aves (unk. size)	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	3
Bos/Bison	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	-	1
Canis sp.	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	-	3
Leporidae	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	-	1
Mammal (sm/med)	0	0	0	1	0	1	1	8	0	0	0	0	0	0	0	0	1	0	0	0	0	-	12
Mammal (medium)	0	0	0	0	0	0	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	-	7
Mammal (med/lg)	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	-	3
Mammal (lg/vlg)	0	0	0	4	0	0	59	108	0	0	0	0	0	0	0	0	16	0	0	0	0	-	187
Mammal (very lg)	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	1	0	0	0	0	-	4
Mammal (unk. size)	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	-	2
Odocoileus sp.	1	5	0	1	1	1	0	0	3	0	1	0	0	0	0	0	0	2	18	0	0	-	33
Procyon lotor	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	1
Rodent (sm/med)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	-	4
Sylvilagus sp.	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	3
Ursus americanus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	-	1
Vertebrate-undiffer.	0	0	0	0	0	0	68	1	0	0	0	0	0	0	0	0	0	0	0	0	0	-	69
Total	1	5	3	10	3	4	138	125	4	1	3	5	3	5	2	1	18	3	25	2	1	-	362
Bivalves																							
Unionacea	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1

Table H-57. Debitage Recovery by Size and Material Type, AU1, 41BL850.

Lithic Material	Size (cm): 0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Indet Lt Brown	0	0	3	4	1	8
Indet Lt Gray	0	1	0	0	0	1
Indet Misc.	0	3	0	0	0	3
Indet Trans	2	2	0	0	0	4
Indet White	2	0	0	1	0	3
Total	4	6	3	5	1	19

Table H-58. Debitage Cortex Characteristics by Material Type, AU1, 41BL850.

Lithic Material	Partial Cortex	No Cortex	Total
Indet Lt Brown	7	1	8
Indet Lt Gray	1	0	1
Indet Misc.	3	0	3
Indet Trans	3	1	4
Indet White	1	2	3
Total	15	4	19

Table H-59. Lithic Tools, AU1, 41BL850.

Lithic Material	complex scraper	early stage biface	edge modified	late stage biface	Total
	Tool Type				
06-HL Tan	0	1	0	0	1
09-HL Tr Brown	1	0	1	0	2
15-Gry/Brn/Grn	0	1	0	0	1
Indet Lt Brown	0	0	1	0	1
Indet Mottled	0	0	0	1	1
Total	**1**	**2**	**2**	**1**	**6**

Table H-60. Debitage Recovery by Size and Material Type, AU1, 41CV44.

Lithic Material	< 0.5	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
	Size (cm)							
Identified Types								
HL Blue (1&10)	0	2	0	1	0	0	0	3
05-Texas Novac	0	0	0	1	0	0	0	1
06-HL Tan	0	34	48	38	19	15	0	154
08-FH Yellow	11	107	49	31	42	16	0	256
13-ER Flecked	0	0	0	0	1	0	0	1
14-FH Gray	0	0	1	16	6	2	0	25
15-Gry/Brn/Grn	0	10	14	29	12	2	1	68
17-Owl Crk Black	67	94	75	25	8	0	0	269
18-C Mottled	0	0	0	0	3	1	0	4
19-C Dr Gray	0	24	0	0	0	0	0	24
22-C Mott/Flecks	0	0	0	0	0	1	0	1
Subtotal	*78*	*271*	*187*	*141*	*91*	*37*	*1*	*806*
Unidentified Types								
Indet Black	0	7	0	0	1	0	0	8
Indet Dk Brown	0	3	12	0	0	0	0	15
Indet Dk Gray	47	147	65	13	0	0	0	272
Indet Lt Brown	37	36	22	12	8	2	0	117
Indet Lt Gray	21	46	25	7	7	0	0	106
Indet Misc.	28	135	130	36	8	0	0	337
Indet Mottled	0	0	0	2	2	1	0	5
Indet White	0	7	3	1	0	0	0	11
Subtotal	*133*	*381*	*257*	*71*	*26*	*3*	*0*	*871*
Total	**211**	**652**	**444**	**212**	**117**	**40**	**1**	**1677**

Table H-61. Binomial Statistic Results, AU1, 41CV44.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
HL Blue (1 &10)	3	less	less
05-Texas Novac	1	less	less
06-HL Tan	154	expected	more
08-FH Yellow	256	more	more
13-ER Flecked	1	less	less
14-FH Gray	25	less	less
15-Gry/Brn/Grn	68	less	expected
17-Owl Crk Black	269	more	more
18-C Mottled	4	less	less
19-C Dr Gray	24	less	less
22-C Mott/Flecks	1	less	less
Total Indet	871	more	na

1. Expected minimum = 117; expected maximum = 161.
2. Expected minimum = 57; expected maximum = 89.

Table H-62. Debitage Cortex Characteristics by Material Type, AU1, 41CV44.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
HL Blue (1&10)	3	0	3
05-Texas Novac	0	1	1
06-HL Tan	31	123	154
08-FH Yellow	26	230	256
13-ER Flecked	0	1	1
14-FH Gray	1	24	25
15-Gry/Brn/Grn	5	63	68
17-Owl Crk Black	19	250	269
18-C Mottled	1	3	4
19-C Dr Gray	0	24	24
22-C Mott/Flecks	1	0	1
Subtotal	*87*	*719*	*806*
Unidentified Types			
Indet Black	8	0	8
Indet Dk Brown	0	15	15
Indet Dk Gray	8	264	272
Indet Lt Brown	48	69	117
Indet Lt Gray	0	106	106
Indet Misc.	63	274	337
Indet Mottled	1	4	5
Indet White	2	9	11
Subtotal	*130*	*741*	*871*
Total	**217**	**1460**	**1677**

Table H-63. Projectile Points, AU1, 41CV44.

	Point Type				
Lithic Material	Ellis	Ensor	Lange	Other Dart	Total
08-FH Yellow	1	0	0	0	1
14-FH Gray	0	0	1	0	1
17-Owl Crk Black	0	1	0	0	1
Indet Dk Gray	1	0	0	1	2
Indet Lt Brown	0	1	0	0	1
Indet Lt Gray	0	0	0	1	1
Total	**2**	**2**	**1**	**2**	**7**

Table H-64. Lithic Tools, AU1, 41CV44.

	Core Type		Tool Type									
Lithic Material	multiple platform	tested cobble	complex scraper	Crushing/Abrading	edge modified	late stage biface	middle stage biface	side scraper	spokeshave	utilized	Total
05-Texas Novac	0	0	0	0	0	0	0	0	0	1	1
06-HL Tan	0	0	0	0	2	1	0	0	0	1	4
08-FH Yellow	0	0	0	0	1	2	0	0	1	1	5
09-HL Tr Brown	0	0	0	0	0	0	0	1	0	0	1
15-Gry/Brn/Grn	1	0	0	0	0	0	0	2	0	3	6
17-Owl Crk Black	0	1	0	0	0	0	0	0	0	0	1
19-C Dr Gray	0	0	0	0	0	1	0	0	0	0	1
22-C Mott/Flecks	0	0	1	1	0	0	0	1	0	0	3
Indet Mottled	0	0	0	0	0	0	1	0	0	0	1
Total	1	1	1	1	3	4	1	4	1	6	23

Table H-65. Faunal Recovery, AU1, 41CV44.

	Element													
Taxon	Calcaneus	Fourth carpal	Indeterminate	Long bone, unident.	Metapodial	Pelvis	Phalange	Rib	Sesamoid	Tooth	Vertebra	right	unknown	**Total**
Vertebrates														
Artiodactyls (med)	0	0	0	0	1	0	1	0	1	0	0	-	-	3
Mammal (sm/med)	0	0	8	4	0	1	0	1	0	0	1	-	-	15
Mammal (medium)	0	0	0	2	0	0	0	0	0	0	0	-	-	2
Mammal (med/lg)	0	0	0	4	0	0	0	0	0	0	0	-	-	4
Mammal (lg/vlg)	0	0	21	98	0	0	0	0	0	0	11	-	-	130
Mammal (unk. size)	0	0	5	0	0	0	0	0	0	0	0	-	-	5
***Odocoileus* sp.**	1	1	0	0	1	0	0	0	0	1	0	-	-	4
Serpentes	0	0	0	0	0	0	0	0	0	0	1	-	-	1
Vertebrate-undiffer.	0	0	5	0	0	0	0	0	0	0	0	-	-	5
Total	1	1	39	108	2	1	1	1	1	1	13	-	-	169
Bivalves														
***Amblema* sp.**	-	-	-	-	-	-	-	-	-	-	-	1	0	1
Unionacea	-	-	-	-	-	-	-	-	-	-	-	0	3	3
Total	0	0	0	0	0	0	0	0	0	0	0	1	3	4

Table H-66. Debitage Recovery by Size and Material Type, AU2, 41CV44.

Lithic Material	Size (cm) 0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Identified Types						
06-HL Tan	0	0	1	0	1	2
08-FH Yellow	8	16	14	3	1	42
14-FH Gray	6	0	0	0	0	6
15-Gry/Brn/Grn	0	11	5	0	2	18
17-Owl Crk Black	26	21	9	1	1	58
Subtotal	*40*	*48*	*29*	*4*	*5*	*126*
Unidentified Types						
Indet Dk Brown	0	5	0	0	0	5
Indet Dk Gray	17	8	1	0	1	27
Indet Lt Brown	26	43	12	1	0	82
Indet Lt Gray	0	13	2	1	1	17
Indet Misc.	13	2	2	1	0	18
Indet Mottled	0	0	0	1	0	1
Indet White	1	0	0	0	0	1
Subtotal	*57*	*71*	*17*	*4*	*2*	*151*
Total	**97**	**119**	**46**	**8**	**7**	**277**

Table H-68. Debitage Cortex Characteristics by Material Type, AU2, 41CV44.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
06-HL Tan	1	1	2
08-FH Yellow	5	37	42
14-FH Gray	0	6	6
15-Gry/Brn/Grn	7	11	18
17-Owl Crk Black	5	53	58
Subtotal	*18*	*108*	*126*
Unidentified Types			
Indet Dk Brown	0	5	5
Indet Dk Gray	0	27	27
Indet Lt Brown	12	70	82
Indet Lt Gray	1	16	17
Indet Misc.	6	12	18
Indet Mottled	0	1	1
Indet White	0	1	1
Subtotal	*19*	*132*	*151*
Total	**37**	**240**	**277**

Table H-67. Binomial Statistic Results, AU2, 41CV44.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
06-HL Tan	2	less	less
08-FH Yellow	42	expected	more
14-FH Gray	6	less	less
15-Gry/Brn/Grn	18	less	expected
17-Owl Crk Black	58	expected	more
Total Indet	151	more	na

1. Expected minimum = 34; expected maximum = 58.
2. Expected minimum = 16; expected maximum = 34.

Table H-69. Faunal Recovery, AU2, 41CV44.

Taxon	Element: Humerus	Indeterminate	Long bone, unident.	Tibiotarsus	Vertebra	Total
Vertebrates						
Mammal (sm/med)	1	0	0	0	0	1
Mammal (lg/vlg)	0	1	27	0	2	30
Odocoileus sp.	0	0	0	1	0	1
Total	**1**	**1**	**27**	**1**	**2**	**32**

Table H-70. Debitage Recovery by Size and Material Type, AU3, 41CV44.

Lithic Material	Size (cm) 0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Identified Types						
06-HL Tan	0	1	0	0	2	3
08-FH Yellow	4	12	5	6	0	27
14-FH Gray	2	1	3	0	0	6
15-Gry/Brn/Grn	0	0	1	3	1	5
17-Owl Crk Black	1	1	2	1	0	5
Subtotal	*7*	*15*	*11*	*10*	*3*	*46*
Unidentified Types						
Indet Dk Brown	1	0	4	0	0	5
Indet Dk Gray	0	4	0	0	0	4
Indet Lt Brown	3	13	6	0	0	22
Indet Lt Gray	1	0	1	1	0	3
Indet Misc.	9	8	1	0	0	18
Indet Mottled	0	1	0	0	0	1
Subtotal	*14*	*26*	*12*	*1*	*0*	*53*
Total	**21**	**41**	**23**	**11**	**3**	**99**

Table H-71 Binomial Statistic Results, AU3, 41CV44.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
06-HL Tan	3	less	less
08-FH Yellow	27	more	more
14-FH Gray	6	less	expected
15-Gry/Brn/Grn	5	less	expected
17-Owl Crk Black	5	less	expected
Total Indet	53	more	na

1. Expected minimum = 9; expected maximum = 24.
2. Expected minimum = 4; expected maximum = 15.

Table H-72. Debitage Cortex Characteristics by Material Type, AU3, 41CV44.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
06-HL Tan	2	1	3
08-FH Yellow	5	22	27
14-FH Gray	1	5	6
15-Gry/Brn/Grn	2	3	5
17-Owl Crk Black	1	4	5
Subtotal	*11*	*35*	*46*
Unidentified Types			
Indet Dk Brown	0	5	5
Indet Dk Gray	0	4	4
Indet Lt Brown	3	19	22
Indet Lt Gray	1	2	3
Indet Misc.	1	17	18
Indet Mottled	1	0	1
Subtotal	*6*	*47*	*53*
Total	**17**	**82**	**99**

Table H-73. Lithic Tools, AU3, 41CV44.

Lithic Material	Tool Type drill	edge modified	finished biface	graver	utilized	Total
06-HL Tan	0	2	0	0	0	2
08-FH Yellow	0	0	0	1	1	2
15-Gry/Brn/Grn	0	0	0	1	0	1
17-Owl Crk Black	1	0	0	0	0	1
Indet Lt Brown	0	0	1	0	0	1
Indet Mottled	0	1	0	0	0	1
Total	**1**	**3**	**1**	**2**	**1**	**8**

Table H-74. Faunal Recovery, AU3, 41CV44.

Taxon	Element: Astragalus	Long bone, unident.	Metapodial	Metatarsal	Phalange	Rib	Tibia	Total
Vertebrates								
Artiodactyls (med)	0	0	1	1	1	0	0	3
Mammal (sm/med)	0	2	0	0	0	1	0	3
Mammal (med/lg)	0	1	0	0	0	0	0	1
Mammal (lg/vlg)	0	18	0	0	0	0	0	18
Odocoileus sp.	1	0	0	0	0	0	3	4
Total	1	21	1	1	1	1	3	29

Table H-75. Debitage Recovery by Size and Material Type, AU1, 41CV45.

Lithic Material	Size (cm): 0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Identified Types							
06-HL Tan	0	0	0	1	2	0	3
08-FH Yellow	1	3	10	0	0	0	14
15-Gry/Brn/Grn	0	0	0	1	0	0	1
17-Owl Crk Black	3	5	14	3	0	0	25
Subtotal	*4*	*8*	*24*	*5*	*2*	*0*	*43*
Unidentified Types							
Indet Black	3	5	1	0	0	0	9
Indet Dk Brown	2	2	1	0	1	0	6
Indet Dk Gray	5	15	0	1	0	0	21
Indet Lt Brown	14	9	22	6	0	1	52
Indet Lt Gray	1	3	2	2	0	0	8
Indet Misc.	0	5	1	0	0	0	6
Indet Mottled	3	10	5	2	2	1	23
Indet White	1	5	1	0	0	0	7
Subtotal	*29*	*54*	*33*	*11*	*3*	*2*	*132*
Total	33	62	57	16	5	2	175

Table H-76. Binomial Statistic Results, AU1, 41CV45.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
06-HL Tan	3	less	less
08-FH Yellow	14	less	less
15-Gry/Brn/Grn	1	less	less
17-Owl Crk Black	25	expected	less
Indet Black	9	less	na
Indet Dk Brown	6	less	na
Indet Dk Gray	21	less	na
Indet Lt Brown	52	more	na
Indet Lt Gray	8	less	na
Indet Misc.	6	less	na
Indet Mottled	23	less	na
Indet White	7	less	na

1. Expected minimum = 25; expected maximum = 45.
2. Expected minimum = 25; expected maximum = 45.

Table H-77. Debitage Cortex Characteristics by Material Type, AU1, 41CV45.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
06-HL Tan	0	3	3
08-FH Yellow	2	12	14
15-Gry/Brn/Grn	0	1	1
17-Owl Crk Black	3	22	25
Subtotal	*5*	*38*	*43*
Unidentified Types			
Indet Black	2	7	9
Indet Dk Brown	1	5	6
Indet Dk Gray	1	20	21
Indet Lt Brown	3	49	52
Indet Lt Gray	3	5	8
Indet Misc.	1	5	6
Indet Mottled	11	12	23
Indet White	0	7	7
Subtotal	*22*	*110*	*132*
Total	27	148	175

Table H-78. Debitage Recovery by Size and Material Type, AU1, 41CV46.

Lithic Material	Size (cm) 0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Identified Types							
06-HL Tan	0	26	18	5	5	0	54
08-FH Yellow	20	27	20	29	8	0	104
11-ER Flat	0	0	1	0	0	0	1
14-FH Gray	0	3	2	5	1	0	11
15-Gry/Brn/Grn	3	27	43	6	10	1	90
17-Owl Crk Black	8	18	14	3	0	0	43
18-C Mottled	0	0	1	0	0	0	1
22-C Mott/Flecks	0	0	0	2	1	0	3
Subtotal	*31*	*101*	*99*	*50*	*25*	*1*	*307*
Unidentified Types							
Indet Dk Brown	3	5	2	1	0	0	11
Indet Dk Gray	6	7	7	2	0	0	22
Indet Lt Brown	5	9	4	1	5	0	24
Indet Lt Gray	6	13	10	7	0	0	36
Indet Misc.	6	27	39	10	0	0	82
Indet Mottled	2	4	0	0	0	0	6
Indet White	4	1	4	0	0	0	9
Subtotal	*32*	*66*	*66*	*21*	*5*	*0*	*190*
Total	**63**	**167**	**165**	**71**	**30**	**1**	**497**

Table H-79. Binomial Statistic Results, AU1, 41CV46.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
06-HL Tan	54	expected	more
08-FH Yellow	104	more	more
11-ER Flat	1	less	less
14-FH Gray	11	less	less
15-Gry/Brn/Grn	90	more	more
17-Owl Crk Black	43	expected	expected
18-C Mottled	1	less	less
22-C Mott/Flecks	3	less	less
Total Indet	190	more	less

1. Expected minimum = 41; expected maximum = 69.

2. Expected minimum = 27; expected maximum = 50.

Table H-80. Debitage Cortex Characteristics by Material Type, AU1, 41CV46.

LithicMaterial	Partial Cortex	Indeterminate	No Cortex	Total
Identified Types				
06-HL Tan	10	0	44	54
08-FH Yellow	27	3	74	104
11-ER Flat	0	0	1	1
14-FH Gray	3	0	8	11
15-Gry/Brn/Grn	7	0	83	90
17-Owl Crk Black	4	0	39	43
18-C Mottled	0	0	1	1
22-C Mott/Flecks	1	0	2	3
Subtotal	*52*	*3*	*252*	*307*
Unidentified Types				
Indet Dk Brown	2	0	9	11
Indet Dk Gray	4	0	18	22
Indet Lt Brown	11	0	13	24
Indet Lt Gray	4	0	32	36
Indet Misc.	26	0	56	82
Indet Mottled	0	0	6	6
Indet White	2	0	7	9
Subtotal	*49*	*0*	*141*	*190*
Total	**101**	**3**	**393**	**497**

Table H-81. Projectile Points, AU1, 41CV46.

	Point Type		
Lithic Material	Montell	Other Dart	Total
02-C White	0	1	1
06-HL Tan	1	0	1
Indet Misc.	1	0	1
Total	2	1	3

Table H-82. Lithic Tools, AU1, 41CV46.

	Tool Type							
Lithic Material	Chopper Type B	Crushing/Abrading	edge modified	finished biface	late stage biface	middle stage biface	utilized	Total
06-HL Tan	1	1	0	1	0	0	1	4
08-FH Yellow	0	0	0	0	0	1	1	2
11-ER Flat	0	0	0	0	1	0	0	1
14-FH Gray	0	0	1	1	1	0	1	4
22-C Mott/Flecks	0	0	0	0	0	1	0	1
Indet Dk Brown	0	0	1	1	0	0	0	2
Indet Lt Gray	0	0	0	0	0	0	1	1
Total	1	1	2	3	2	2	4	15

Table H-83. Faunal Recovery, AU1, 41CV46.

	Element										
Taxon	Atlas	Indeterminate	Long bone, unident.	Metapodial	Pelvis	Phalange	Plastron	Rib	Vertebra	unknown	Total
Vertebrates											
Artiodactyls (med)	1	0	0	10	0	0	0	0	1	-	12
Emydidae	0	0	0	0	0	0	1	0	0	-	1
Mammal (med/lg)	0	0	0	0	0	0	0	1	0	-	1
Mammal (lg/vlg)	0	4	17	0	0	0	0	1	0	-	22
Odocoileus sp.	0	0	0	0	1	1	0	0	0	-	2
Total	1	4	17	10	1	1	1	2	1	-	38
Bivalves											
Indeterminate/unknown	-	-	-	-	-	-	-	-	-	1	1

Table H-84. Debitage Recovery by Size and Material Type, AU2 41CV46.

	Size (cm)							
LithicMaterial	<0.5	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Identified Types								
HL Blue (1 & 10)	0	0	1	2	0	0	0	3
02-C White	0	0	0	0	1	0	0	1
04-7 Mile Novac	0	4	0	0	0	0	0	4
06-HL Tan	0	0	0	9	23	5	0	37
08-FH Yellow	23	147	45	86	26	11	2	340
09-HL Tr Brown	0	0	0	0	1	0	0	1
14-FH Gray	0	15	16	1	11	12	0	55
15-Gry/Brn/Grn	7	60	206	134	72	23	4	506
17-Owl Crk Black	9	50	76	17	6	3	0	161
19-C Dr Gray	0	0	0	0	0	1	0	1
22-C Mott/Flecks	0	0	0	0	2	2	0	4
Subtotal	*39*	*276*	*344*	*249*	*142*	*57*	*6*	*1113*
Unidentified Types								
Indet Black	1	0	0	1	0	0	0	2
Indet Dk Brown	6		3	5	3	0	0	23
Indet Dk Gray	16	[illegible]	27	2	4	0	0	98
Indet Lt Brown	15	61	22	11	5	0	0	114
Indet Lt Gray	1	1	13	10	3	0	0	28
Indet Misc.	33	190	107	73	9	10	1	423
Indet Mottled	0	0	0	1	0	1	0	2
Indet White	0	7	3	4	0	0	0	14
Subtotal	*72*	*314*	*175*	*107*	*24*	*11*	*1*	*704*
Total	111	590	519	356	166	68	7	1817

Table H-85. Binomial Statistic Results, AU2, 41CV46.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
HL Blue (1 &10)	3	less	less
02-C White	1	less	less
04-7 Mile Novac	4	less	less
06-HL Tan	37	less	less
08-FH Yellow	340	more	more
09-HL Tr Brown	1	less	less
14-FH Gray	55	less	less
15-Gry/Brn/Grn	506	more	more
17-Owl Crk Black	161	expected	more
19-C Dr Gray	1	less	less
22-C Mott/Flecks	4	less	less
Total Indet	704	more	na

1. Expected minimum = 128; expected maximum = 174.
2. Expected minimum = 82; expected maximum = 120.

Table H-86. Debitage Cortex Characteristics by Material Type, AU2, 41CV46.

Lithic Material	All Cortex	Partial Cortex	Indeterminate	No Cortex	Total
Identified Types					
HL Blue (1 & 10)	0	1	0	2	3
02-C White	0	0	0	1	1
04-7 Mile Novac	0	4	0	0	4
06-HL Tan	0	7	0	30	37
08-FH Yellow	0	32	2	306	340
09-HL Tr Brown	0	1	0	0	1
14-FH Gray	0	0	0	55	55
15-Gry/Brn/Grn	17	68	1	420	506
17-Owl Crk Black	4	13	0	144	161
19-C Dr Gray	0	1	0	0	1
22-C Mott/Flecks	0	3	0	1	4
Subtotal	*21*	*130*	*3*	*959*	*1113*
Unidentified Types					
Indet Black	0	0	0	2	2
Indet Dk Brown	0	0	0	23	23
Indet Dk Gray	0	5	0	93	98
Indet Lt Brown	0	26	0	88	114
Indet Lt Gray	0	4	0	24	28
Indet Misc.	1	94	2	326	423
Indet Mottled	0	2	0	0	2
Indet White	0	1	0	13	14
Subtotal	*1*	*132*	*2*	*569*	*704*
Total	**22**	**262**	**5**	**1528**	**1817**

Table H-87. Projectile Points, AU2, 41CV46.

	Point Type								
Lithic Material	Ensor	Marcos	Marshall	Montell	Other Arrow	Other Dart	Pedernales	Scallorn	Total
06-HL Tan	1	1	2	0	0	0	0	0	4
17-Owl Crk Black	0	0	0	0	0	2	0	0	2
Indet Lt Brown	0	0	0	0	1	0	0	0	1
Indet Lt Gray	0	0	0	0	0	0	1	0	1
Indet Misc.	0	0	0	1	1	0	0	1	3
Total	**1**	**1**	**2**	**1**	**2**	**2**	**1**	[illegible]	**11**

Table H-88. Lithic Tools, AU2, 41CV46.

AU	Mixed										
	Core Type	Tool Type									
Lithic Material	multiple platform	Chopper Type A	Crushing/Abrading	edge modified	finished biface	graver	Hammerstone	late stage biface	middle stage biface	utilized	Total
06-HL Tan	2	1	0	0	0	0	0	1	1	2	7
07-Foss Pale Brown	0	0	1	0	0	0	0	0	0	1	2
08-FH Yellow	2	0	0	1	0	0	0	0	0	1	4
14-FH Gray	0	0	0	0	0	0	0	1	0	1	2
15-Gry/Brn/Grn	0	0	0	0	0	0	0	2	1	2	5
17-Owl Crk Black	0	0	0	1	0	0	0	2	0	0	3
18-C Mottled	0	0	0	0	0	0	0	0	0	1	1
19-C Dr Gray	0	0	0	1	0	0	0	0	0	0	1
Indet Dk Brown	0	0	0	1	1	0	0	0	0	1	3
Indet Lt Brown	0	0	0	0	0	0	0	1	0	0	1
Indet Lt Gray	0	0	0	0	0	1	0	0	0	1	2
Indet Mottled	0	0	0	0	0	0	0	0	1	1	2
Indet White	0	0	0	0	0	0	0	0	0	1	1
Quartzite	0	0	0	0	0	0	1	0	0	0	1
Total	**4**	**1**	**1**	**4**	**1**	**1**	**1**	**7**	**3**	**12**	**35**

Table H-89. Faunal Recovery, AU2, 41CV46.

	Element											
Taxon	Carpal/Tarsal	Indeterminate	Long bone, unident.	Mandible	Metacarpal	Metapodial	Rib	Vertebra	left	right	unknown	**Total**
Vertebrates												
Artiodactyls (med)	1	0	0	0	1	3	0	0	-	-	-	5
Mammal (sm/med)	0	1	9	0	0	0	0	0	-	-	-	10
Mammal (med/lg)	0	3	8	1	0	0	0	1	-	-	-	13
Mammal (lg/vlg)	0	1	35	0	0	0	1	0	-	-	-	37
Mammal (very lg)	0	0	0	0	0	0	0	1	-	-	-	1
Vertebrate-undiffer.	0	2	0	0	0	0	0	0	-	-	-	2
Total	1	7	52	1	1	3	1	2	-	-	-	68
Bivalves												
Amblema plicata	-	-	-	-	-	-	-	-	0	1	0	1
Indeterminate/unknown	-	-	-	-	-	-	-	-	0	0	2	2
***Quadrula* sp.**	-	-	-	-	-	-	-	-	1	0	0	1
Tritigonia verrucosa	-	-	-	-	-	-	-	-	0	1	0	1
Total	-	-	-	-	-	-	-	-	1	2	2	5

Table H-90. Debitage Recovery by Size and Material Type, AU3, 41CV46.

	Size(cm)					
Lithic Material	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Identified Types						
02-C White	0	0	0	1	0	1
06-HL Tan	0	0	1	1	2	4
08-FH Yellow	2	0	2	1	1	6
11-ER Flat	0	0	0	1	0	1
14-FH Gray	0	0	1	0	0	1
15-Gry/Brn/Grn	1	6	2	2	1	12
17-Owl Crk Black	0	0	3	0	0	3
Subtotal	*3*	*6*	*9*	*6*	*4*	*28*
Unidentified Types						
Indet Dk Brown	0	0	1	0	0	1
Indet Dk Gray	0	3	4	0	0	7
Indet Lt Brown	0	2	1	0	0	3
Indet Lt Gray	0	1	0	0	0	1
Indet Misc.	1	1	0	0	1	3
Indet White	0	0	2	0	0	2
Subtotal	[illegible]	*7*	*8*	*0*	*1*	*17*
Total	**4**	**13**	**17**	**6**	**5**	**45**

Table H-92. Debitage Cortex Characteristics by Material Type, AU3 41CV46.

Lithic Material	All Cortex	Partial Cortex	No Cortex	Total
Identified Types				
02-C White	0	0	1	1
06-HL Tan	0	3	1	4
08-FH Yellow	0	2	4	6
11-ER Flat	0	0	1	1
14-FH Gray	0	0	1	1
15-Gry/Brn/Grn	0	1	11	12
17-Owl Crk Black	0	0	3	3
Subtotal	*0*	*6*	*22*	*28*
Unidentified Types				
Indet Dk Brown	0	0	1	1
Indet Dk Gray	0	0	7	7
Indet Lt Brown	0	1	2	3
Indet Lt Gray	0	0	1	1
Indet Misc.	0	0	3	3
Indet White	1	0	1	2
Subtotal	*1*	*1*	*15*	*17*
Total	**1**	**7**	**37**	**45**

Table H-91. Binomial Statistic Results, A[illegible]

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
02-C White	1	less	expected
06-HL Tan	4	expected	expected
08-FH Yellow	6	expected	expected
11-ER Flat	1	less	expected
14-FH Gray	1	less	expected
15-Gry/Brn/Grn	12	more	more
17-Owl Crk Black	3	expected	expected
Total Indet	17	more	na

1. Expected minimum = 128; expected maximum = 174.
2. Expected minimum = 82; expected maximum = 120.

Table H-93. Projectile Points, AU3, 41CV46

Lithic Material	Point Type: Castroville	Langtry	Wells	Total
08-FH Yellow	0	0	1	1
15-Gry/Brn/Grn	1	0	0	1
17-Owl Crk Black	0	1	0	1
Total	1	1	1	3

Table H-95. Binomial Statistic Results, AU1, 41CV47

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
06-HL Tan	11	less	expected
08-FH Yellow	33	less	more
13-ER Flecked	1	less	less
14-FH Gray	4	less	less
15-Gry/Brn/Grn	39	expected	more
17-Owl Crk Black	19	less	expected
19-C Dr Gray	1	less	less
Total Indet	299	more	na

1. Expected minimum = 38; expected maximum = 64.
2. Expected minimum = 8; expected maximum = 23.

Table H-94. Debitage Recovery by Size and Material Type, AU1, 41CV47

Lithic Material	Size (cm): 0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Identified Types						
06-HL Tan	0	0	6	3	2	11
08-FH Yellow	3	17	2	6	5	33
13-ER Flecked	0	0	1	0	0	1
14-FH Gray	0	0	1	1	2	4
15-Gry/Brn/Grn	0	11	14	12	2	39
17-Owl Crk Black	0	7	7	4	1	19
19-C Dr Gray	0	0	0	1	0	1
Subtotal	*3*	*35*	*31*	*27*	*12*	*108*
Unidentified Types						
Indet Black	6	4	0	0	0	10
Indet Dk Brown	3	9	23	6	0	41
Indet Dk Gray	32	16	8	2	0	58
Indet Lt Brown	17	43	13	10	0	83
Indet Lt Gray	5	20	4	1	2	32
Indet Misc.	26	26	6	2	0	60
Indet Mottled	0	0	1	2	0	3
Indet Trans	0	1	0	2	0	3
Indet White	2	4	3	0	0	9
Subtotal	*91*	*123*	*58*	*25*	*2*	*299*
Total	94	158	89	52	14	407

Table H-96. Debitage Cortex Characteristics by Material Type, AU1 41CV47

Lithic Material	Partial Cortex	Indeterminate	No Cortex	Total
Identified Types				
06-HL Tan	4	2	5	11
08-FH Yellow	8	0	25	33
13-ER Flecked	1	0	0	1
14-FH Gray	0	2	2	4
15-Gry/Brn/Grn	6	1	32	39
17-Owl Crk Black	1	0	18	19
19-C Dr Gray	0	1	0	1
Subtotal	*20*	*6*	*82*	*108*
Unidentified Types				
Indet Black	0	0	10	10
Indet Dk Brown	1	0	40	41
Indet Dk Gray	5	0	53	58
Indet Lt Brown	8	3	72	83
Indet Lt Gray	2	0	30	32
Indet Misc.	0	0	60	60
Indet Mottled	1	0	2	3
Indet Trans	0	0	3	3
Indet White	0	1	8	9
Subtotal	*17*	*4*	*278*	*299*
Total	37	10	360	407

Table H-97. Lithic Tools, AU1, 41CV47

Lithic Material	Core Type: multiple platform	Tool Type: complex scraper	edge modified	finished biface	late stage biface	utilized	Total
06-HL Tan	0	0	1	0	0	0	1
08-FH Yellow	1	0	0	0	0	0	1
11-ER Flat	0	0	0	1	0	0	1
15-Gry/Brn/Grn	1	0	0	0	1	0	2
Indet Lt Brown	0	0	0	0	0	1	1
Indet Mottled	0	1	0	0	1	0	2
Total	2	1	1	1	2	1	8

Table H-98. Faunal Recovery, AU1, 41CV47

Taxon	Element: Antler	Carpal/Tarsal	Indeterminate	Long bone, unident.	Metapodial	Phalange	Vertebra	Total
Vertebrates								
Artiodactyls (med)	0	0	0	0	2	2	0	4
Mammal (sm/med)	0	0	1	0	0	0	0	1
Mammal (med/lg)	0	1	2	4	0	0	2	9
Mammal (lg/vlg)	0	0	5	15	0	0	0	20
Odocoileus sp.	2	0	0	0	0	0	0	2
Vertebrate-undiffer.	0	0	4	0	0	0	0	4
Total	2	1	12	19	2	2	2	40

Table H-99. Debitage Recovery by Size and Material Type, AU2, 41CV47.

Lithic Material	Size (cm): <0.5	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Identified Types							
02-C White	0	0	0	2	0	0	2
06-HL Tan	0	0	3	0	1	5	9
08-FH Yellow	5	31	0	15	5	1	57
15-Gry/Brn/Grn	0	5	9	4	0	0	18
17-Owl Crk Black	0	0	1	4	5	0	10
18-C Mottled	0	0	0	0	0	2	2
Subtotal	*5*	*36*	*13*	*25*	*11*	*8*	*98*
Unidentified Types							
Indet Black	0	0	0	2	0	0	2
Indet Dk Brown	22	43	4	2	1	2	74
Indet Dk Gray	82	84	5	18	0	0	189
Indet Lt Brown	36	122	13	37	20	2	230
Indet Lt Gray	15	20	1	1	1	0	38
Indet Misc.	36	50	21	6	0	2	115
Indet Mottled	0	0	0	4	0	0	4
Indet Trans	0	0	0	1	0	0	1
Indet White	0	0	1	0	0	0	1
Subtotal	*191*	*319*	*45*	*71*	*22*	*6*	*654*
Total	196	355	58	96	33	14	752

Table H-100. Binomial Statistic Results, AU2, 41CV47.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
02-C White	2	less	less
06-HL Tan	9	less	expected
08-FH Yellow	57	less	more
15-Gry/Brn/Grn	18	less	expected
17-Owl Crk Black	10	less	expected
18-C Mottled	2	less	less
Total Indet	654	more	na

1. Expected minimum = 89; expected maximum = 126.

2. Expected minimum = 9; expected maximum = 24.

Table H-101. Debitage Cortex Characteristics by Material Type, AU2, 41CV47

Lithic Material	tial Cort	No Cortex	Total
Identified Types			
02-C White	2	0	2
06-HL Tan	2	7	9
08-FH Yellow	15	42	57
15-Gry/Brn/Grn	3	15	18
17-Owl Crk Black	5	5	10
18-C Mottled	2	0	2
Subtotal	*29*	*69*	*98*
Unidentified Types			
Indet Black	2	0	2
Indet Dk Brown	4	70	74
Indet Dk Gray	1	188	189
Indet Lt Brown	61	169	230
Indet Lt Gray	0	38	38
Indet Misc.	13	102	115
Indet Mottled	4	0	4
Indet Trans	0	1	1
Indet White	0	1	1
Subtotal	*85*	*569*	*654*
Total	**114**	**638**	**752**

Table H-102. Lithic Tools, AU2, 41CV47

Lithic Material	Tool Type: Chopper Type B	edge modified	late stage biface	Total
17-Owl Crk Black	0	1	0	1
Indet Dk Gray	0	0	1	1
Indet Lt Brown	1	0	0	1
Indet Misc.	0	0	1	1
Total	**1**	**1**	**2**	**4**

Table H-103. Faunal Recovery, AU2, 41CV47

Taxon	Element: Indeterminate	Long bone, unident	Phalange	Total
Vertebrates				
Artiodactyls (med)	0	0	1	1
Mammal (sm/med)	2	3	0	5
Mammal (med/lg)	8	0	0	8
Mammal (lg/vlg)	1	25	0	26
Mammal (unk. size)	8	0	0	8
Odocoileus sp.	0	0	2	2
Vertebrate-undiffer.	4	0	0	4
Total	**23**	**28**	**3**	**54**

Table H-104. Debitage Recovery by Size and Material Type, AU1, 41CV48

	Size (cm)							
Lithic Material	<0.5	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Identified Types								
05-Texas Novac	0	0	0	0	0	1	0	1
06-HL Tan	0	0	6	53	20	13	0	92
08-FH Yellow	9	106	94	32	39	14	1	295
09-HL Tr Brown	0	0	12	1	4	1	0	18
14-FH Gray	0	5	34	22	10	9	0	80
15-Gry/Brn/Grn	73	788	549	531	232	88	6	2267
17-Owl Crk Black	28	145	65	80	13	7	0	338
22-C Mott/Flecks	0	0	0	0	0	1	0	1
26-C Striated	0	0	0	0	0	1	0	1
Subtotal	*110*	*1044*	*760*	*719*	*318*	*135*	*7*	*3093*
Unidentified Types								
Indet Black	0	1	0	15	1	0	0	17
Indet Dk Brown	12	69	0	5	0	3	0	89
Indet Dk Gray	2	105	24	14	3	0	0	148
Indet Lt Brown	111	121	87	82	35	5	0	441
Indet Lt Gray	0	12	47	22	3	2	1	87
Indet Misc.	128	412	274	124	59	4	0	1061
Indet Mottled	0	0	0	1	6	7	0	14
Indet Trans	0	0	1	2	0	0	0	3
Indet White	0	1	4	2	0	1	0	8
Subtotal	*253*	*721*	*457*	*327*	*107*	*22*	*1*	*1868*
Quartz	0	0	0	1	0	0	0	1
Total	**363**	**1765**	**1197**	**1047**	**425**	**157**	**8**	**4962**

Table H-105. Binomial Statistic Results, AU1, 41CV48

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
05-Texas Novac	1	less	less
06-HL Tan	92	less	less
08-FH Yellow	295	less	less
09-HL Tr Brown	18	less	less
14-FH Gray	80	less	less
15-Gry/Brn/Grn	2267	more	more
17-Owl Crk Black	338	less	expected
22-C Mott/Flecks	1	less	less
26-C Striated	1	less	less
Total Indet	1868	more	na

1. Expected minimum = 455; expected maximum = 538.
2. Expected minimum = 309; expected maximum = 378.

Table H-106. Debitage Cortex Characteristics by Material Type, AU1, 41CV48

Lithic Material	All Cortex	Partial Cortex	Indeterminate	No Cortex	Total
Identified Types					
05-Texas Novac	0	1	0	0	1
06-HL Tan	0	33	2	57	92
08-FH Yellow	0	68	0	227	295
09-HL Tr Brown	0	1	0	17	18
14-FH Gray	0	17	0	63	80
15-Gry/Brn/Grn	0	385	0	1882	2267
17-Owl Crk Black	0	34	0	304	338
22-C Mott/Flecks	0	1	0	0	1
26-C Striated	0	1	0	0	1
Subtotal	*0*	*541*	*2*	*2550*	*3093*
Unidentified Types					
Indet Black	0	1	0	16	17
Indet Dk Brown	0	4	0	85	89
Indet Dk Gray	0	11	0	137	148
Indet Lt Brown	0	76	0	365	441
Indet Lt Gray	0	8	0	79	87
Indet Misc.	1	182	0	878	1061
Indet Mottled	0	10	0	4	14
Indet Trans	0	1	0	2	3
Indet White	0	1	0	7	8
Subtotal	*1*	*294*	*0*	*1573*	*1868*
Quartz	0	0	0	1	1
Total	**1**	**835**	**2**	**4124**	**4962**

Table H-107. Projectile Points, AU1, 41CV48

	Point Type			
Lithic Material	Almagre	Other Dart	Pedernales	Total
06-HL Tan	0	1	3	4
08-FH Yellow	0	1	0	1
15-Gry/Brn/Grn	1	1	2	4
17-Owl Crk Black	0	0	2	2
Indet Lt Brown	0	0	1	1
Total	**1**	**3**	**8**	**12**

Table H-108. Lithic Tools, AU1, 41CV48.

Lithic Material	Core Type: multiple platform	Core Type: tested cobble	Tool Type: Chopper Type B	early stage biface	edge modified	finished biface	graver	Hammerstone	late stage biface	middle stage biface	spokeshave	stone awl	utilized	Total
03-AM Gray	0	0	0	0	0	0	0	0	0	0	0	0	1	1
06-HL Tan	1	0	1	0	2	1	0	0	2	0	0	0	8	15
08-FH Yellow	0	1	1	4	0	0	1	0	3	0	0	1	18	29
09-HL Tr Brown	0	0	0	0	0	0	0	0	0	0	0	0	1	1
10-HL Blue	0	0	0	1	0	0	0	0	0	0	0	0	0	1
13-ER Flecked	0	0	0	0	1	0	0	0	0	1	0	0	0	2
14-FH Gray	0	0	0	0	0	0	0	0	0	0	0	0	8	8
15-Gry/Brn/Grn	1	0	0	1	1	1	1	0	4	2	0	0	38	49
17-Owl Crk Black	0	0	0	0	0	0	0	0	0	0	0	0	3	3
Indet Dk Brown	0	0	0	0	0	0	0	0	0	0	0	0	3	3
Indet Dk Gray	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Indet Lt Brown	0	0	1	0	0	0	1	0	0	1	0	0	6	9
Indet Lt Gray	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Indet Misc.	0	0	0	0	0	0	0	0	1	0	1	0	8	10
Indet Mottled	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Quartzite	0	0	0	0	0	0	0	2	0	0	0	0	0	2
Total	2	1	3	6	4	2	3	2	10	4	1	1	97	136

Table H-109. Faunal Recovery, AU1, 41CV48

Taxon	Element: Calcaneus	Humerus	Indeterminate	Long bone, unident.	Metatarsal	Rib	Tooth	Ulna	Vertebra	right	unknown	Total
Vertebrates												
Artiodactyls (med)	0	3	0	0	2	0	0	1	0	-	-	6
Carnivora	0	0	0	0	0	0	1	0	0	-	-	1
Mammal (med/lg)	0	0	0	3	0	0	0	0	0	-	-	3
Mammal (lg/vlg)	0	0	7	64	0	0	0	0	1	-	-	72
Mammal (very lg)	0	0	0	0	0	1	0	0	0	-	-	1
Odocoileus sp.	1	0	0	0	0	0	1	0	0	-	-	2
Total	1	3	7	67	2	1	2	1	1	-	-	85
Bivalves												
Amblema plicata	-	-	-	-	-	-	-	-	-	1	0	1
Unionacea	-	-	-	-	-	-	-	-	-	0	2	2
Total	-	-	-	-	-	-	-	-	-	1	2	3

Table H-110. Debitage Recovery by Size and Material Type, AU2, 41CV48

	Size (cm)							
Lithic Material	<0.5	0.5-0.9	0.9-1.2	1.2-1.8	1.8-2.6	2.6-5.2	>5.2	Total
Identified Types								
04-7 Mile Novac	0	0	0	0	0	1	0	1
05-Texas Novac	0	0	0	0	1	1	0	2
06-HL Tan	10	102	11	32	9	5	1	170
07-Foss Pale Brown	0	0	0	0	0	1	0	1
08-FH Yellow	9	106	36	36	40	6	0	233
09-HL Tr Brown	0	0	0	1	2	1	0	4
14-FH Gray	0	6	7	8	6	3	1	31
15-Gry/Brn/Grn	109	431	367	300	97	24	1	1329
17-Owl Crk Black	300	691	215	120	25	4	0	1355
18-C Mottled	0	0	0	1	0	2	1	4
Subtotal	*428*	*1336*	*636*	*498*	*180*	*48*	*4*	*3130*
Unidentified Types								
Indet Black	6	0	0	0	0	0	0	6
Indet Dk Brown	39	30	4	35	2	2	0	112
Indet Dk Gray	63	203	58	23	2	0	0	349
Indet Lt Brown	175	81	14	111	8	1	0	390
Indet Lt Gray	104	223	130	49	19	1	0	526
Indet Misc.	284	1171	316	263	36	6	0	2076
Indet Mottled	0	0	3	4	23	3	0	33
Indet Trans	0	0	3	0	0	0	0	3
Indet White	8	0	3	7	3	0	0	21
Subtotal	*679*	*1708*	*531*	*492*	*93*	*13*	*0*	*3516*
Total	**1107**	**3044**	**1167**	**990**	**273**	**61**	**4**	**6646**

Table H-111. Binomial Statistic Results, AU2, 41CV48.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
04-7 Mile Novac	1	less	less
05-Texas Novac	2	less	less
06-HL Tan	170	less	less
07-Foss Pale Brown	1	less	less
08-FH Yellow	233	less	less
09-HL Tr Brown	4	less	less
14-FH Gray	31	less	less
15-Gry/Brn/Grn	1329	more	more
17-Owl Crk Black	1355	more	more
18-C Mottled	4	less	less
Total Indet	3516	more	na

1. Expected minimum = 559; expected maximum = 651.

2. Expected minimum = 280; expected maximum = 346.

Table H-112. Debitage Cortex Characteristics by Material Type, AU2, 41CV48.

Lithic Material	Partial Cortex	Indeterminate	No Cortex	Total
Identified Types				
04-7 Mile Novac	1	0	0	1
05-Texas Novac	0	0	2	2
06-HL Tan	20	0	150	170
07-Foss Pale Brown	1	0	0	1
08-FH Yellow	43	0	190	233
09-HL Tr Brown	1	0	3	4
14-FH Gray	8	0	23	31
15-Gry/Brn/Grn	104	0	1225	1329
17-Owl Crk Black	59	0	1296	1355
18-C Mottled	4	0	0	4
Subtotal	*241*	*0*	*2889*	*3130*
Unidentified Types				
Indet Black	0	0	6	6
Indet Dk Brown	20	0	92	112
Indet Dk Gray	3	0	346	349
Indet Lt Brown	25	0	365	390
Indet Lt Gray	8	0	518	526
Indet Misc.	190	6	1880	2076
Indet Mottled	28	0	5	33
Indet Trans	1	0	2	3
Indet White	1	0	20	21
Subtotal	*276*	*6*	*3234*	*3516*
Total	**517**	**6**	**6123**	**6646**

Table H-113. Projectile Points, AU2, 41CV48

	Point Type							
Lithic Material	Cliffton	Large	Morrill	Other Arrow	Other Dart	Pedernales	Scallorn	Total
06-HL Tan	0	0	0	0	0	2	0	2
08-FH Yellow	0	0	0	0	0	1	0	1
09-HL Tr Brown	0	0	0	0	0	1	0	1
17-Owl Crk Black	0	1	0	1	1	0	0	3
18-C Mottled	0	0	1	0	0	0	0	1
Indet Dk Brown	1	0	0	0	0	0	0	1
Indet Dk Gray	0	0	0	0	0	1	0	1
Indet Lt Brown	0	0	0	0	0	0	1	1
Indet Misc.	0	0	0	1	0	0	1	2
Total	**1**	**1**	**1**	**2**	**1**	**5**	**2**	**13**

Table H-114. Lithic Tools, AU2, 41CV48.

	Core Type	Tool Type													
Lithic Material	single platform	Chopper Type A	Chopper Type B	drill	early stage biface	edge modified	end scraper	finished biface	graver	late stage biface	middle stage biface	side scraper	spokeshave	[illegible]	Total
03-AM Gray	0	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]	1
06-HL Tan	0	1	1	0	0	0	0	2	0	0	0	1	0	6	11
07-Foss Pale Brown	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
08-FH Yellow	1	0	0	0	0	1	0	2	2	2	0	1	3	21	33
14-FH Gray	0	0	0	0	0	0	0	1	1	1	0	0	0	5	8
15-Gry/Brn/Grn	0	0	1	1	0	2	0	4	0	4	1	0	1	30	44
16-Leona Park	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
17-Owl Crk Black	0	0	0	0	0	0	0	0	0	0	0	0	0	14	14
22-C Mott/Flecks	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Indet Dk Brown	0	0	0	0	0	0	0	0	1	1	0	0	0	3	5
Indet Dk Gray	0	0	0	0	0	0	0	1	0	0	0	0	1	2	4
Indet Lt Brown	0	0	1	0	0	0	0	2	1	0	0	0	0	13	17
Indet Lt Gray	0	0	0	0	0	0	0	0	0	0	0	1	0	9	10
Indet Misc.	0	0	0	0	0	0	0	0	1	0	0	0	2	11	14
Indet Mottled	0	0	0	0	0	0	1	0	0	0	0	0	0	4	5
Total	1	1	3	1	1	3	1	12	6	8	1	3	7	122	170

Table H-115. Faunal Recovery, AU2, 41CV48.

	Element												
Taxon	Astragalus	Calcaneus	Indeterminate	Long bone, unident.	Mandible	Phalange	Rib	Tibia	Tooth	Vertebra	right	unknown	Total
Vertebrates													
Artiodactyla	0	0	0	0	0	0	0	0	1	0	-	-	1
Artiodactyla (med)	0	0	0	0	2	1	0	1	0	3	-	-	7
Mammal (small)	0	0	0	7	0	0	0	0	0	0	-	-	7
Mammal (medium)	0	0	0	1	0	0	0	0	0	0	-	-	1
Mammal (med/lg)	0	0	4	9	0	0	1	0	0	1	-	-	15
Mammal (lg/vlg)	0	0	3	59	0	0	3	0	0	0	-	-	65
Mammal (unk. size)	0	0	7	0	0	0	0	0	0	0	-	-	7
Odocoileus sp.	1	1	0	0	1	0	0	0	[illegible]	0	-	-	6
Sylvilagus sp.	0	0	0	0	1	0	0	0	0	0	-	-	1
Vertebrate-undiffer.	0	0	4	0	0	0	0	0	0	0	-	-	4
Total	1	1	18	76	4	1	4	1	4	4	-	-	114
Bivalves													
Indeterminate/unknown	-	-	-	-	-	-	-	-	-	-	0	1	1
Lampsilis sp.	-	-	-	-	-	-	-	-	-	-	1	0	1
Total	-	-	-	-	-	-	-	-	-	-	1	1	2

Table H-116 Faunal Recovery, AU1, 41CV71.

Taxon	Element															Total
	Astragalus	Calcaneus	Carpal/Tarsal	Cranium	Femur	Indeterminate	Long bone	Mandible	Pelvis	Phalange	Radius	Rib	Tibia	Tooth	Vertebra	
Vertebrates																
Canis sp.	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0	4
Carnivora	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Mammalia (lg/vlg)	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	4
Mammalia (med/lg)	0	0	0	0	0	6	0	0	0	0	0	1	0	0	0	7
Mammalia (micro)	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Mammalia (micro/sm)	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
Mammalia (sm/med)	0	0	0	0	0	0	4	0	0	2	0	0	0	0	0	6
Mammalia (small)	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3
Osteichthyes (sm)	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Rodentia (small)	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	2
Serpentes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
Sylvilagus sp.	0	1	2	0	2	0	0	1	1	0	1	0	1	0	0	9
Vertebrata	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	5
Total	**1**	**1**	**2**	**1**	**3**	**15**	**10**	**2**	**1**	**2**	**1**	**1**	**1**	**4**	**5**	**50**

Table H-117. Debitage Recovery by Size and Material Type, AU1, 41CV88.

Lithic Material	Size (cm)					Total
	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	
Identified Types						
02-C White	0	0	0	0	1	1
06-HL Tan	0	0	1	3	1	5
07-Foss Pale Brown	0	0	1	0	0	1
08-FH Yellow	0	2	8	0	1	11
14-FH Gray	0	3	1	6	2	12
17-Owl Crk Black	0	0	1	1	1	3
18-C Mottled	0	0	1	5	9	15
19-C Dr Gray	0	0	0	2	0	2
22-C Mott/Flecks	0	0	0	1	2	3
Subtotal	*0*	*5*	*13*	*18*	*17*	*53*
Unidentified Types						
Indet Black	3	5	3	0	0	11
Indet Dk Brown	7	4	0	2	0	13
Indet Dk Gray	7	17	8	0	0	32
Indet Lt Brown	17	23	15	9	2	66
Indet Lt Gray	20	22	20	4	2	68
Indet Misc.	2	11	3	7	1	24
Indet Mottled	1	2	3	7	0	13
Indet Trans	1	2	7	0	0	10
Indet White	0	1	2	2	1	6
Subtotal	*58*	*87*	*61*	*31*	*6*	*243*
Total	**58**	**92**	**74**	**49**	**23**	**296**

Table H-118 Binomial Statistic Results, AU1, 41CV88.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
02-C White	1	less	less
06-HL Tan	5	less	expected
07-Foss Pale Brown	1	less	less
08-FH Yellow	11	less	expected
14-FH Gray	12	less	more
17-Owl Crk Black	3	less	expected
18-C Mottled	15	less	more
19-C Dr Gray	2	less	expected
22-C Mott/Flecks	3	less	expected
Total Indet	243	more	na

1. Expected minimum = 19; expected maximum = 40.
2. Expected minimum = 2; expected maximum = 11.

Table H-119 Debitage Cortex Characteristics by Material Type, AU1, 41CV88.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
02-C White	0	1	1
06-HL Tan	1	4	5
07-Foss Pale Brown	1	0	1
08-FH Yellow	4	7	11
14-FH Gray	4	8	12
17-Owl Crk Black	2	1	3
18-C Mottled	13	2	15
19-C Dr Gray	0	2	2
22-C Mott/Flecks	2	1	3
Subtotal	*27*	*26*	*53*
Unidentified Types			
Indet Black	0	11	11
Indet Dk Brown	2	11	13
Indet Dk Gray	3	29	32
Indet Lt Brown	15	51	66
Indet Lt Gray	6	62	68
Indet Misc.	7	17	24
Indet Mottled	11	2	13
Indet Trans	0	10	10
Indet White	0	6	6
Subtotal	*44*	*199*	*243*
Total	**71**	**225**	**296**

Table H-120. Lithic Tools, AU1, 41CV88.

	Tool Type			
Lithic Material	finished biface	late stage biface	spokeshave	Total
15-Gry/Brn/Grn	1	1	1	3
Total	1	1	1	3

Table H-121 Faunal Recovery, AU1, 41CV88.

	Element																		
Taxon	Antler	Astragalus	Cranium	Femur	Indeterminate	Long bone, unident.	Mandible	Metapodial	Metatarsal	Pelvis	Phalange	Plastron	Rib	Tooth	Vertebra	left	right	unknown	Total
Vertebrates																			
Artiodactyls (med)	0	0	0	1	0	0	1	2	0	0	3	0	0	0	0	-	-	-	7
Castor canadensis	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	-	-	-	1
Mammal (small)	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	-	-	-	2
Mammal (sm/med)	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	-	-	-	1
Mammal (medium)	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	-	-	-	2
Mammal (med/lg)	0	0	0	0	8	7	0	0	0	0	0	0	3	0	1	-	-	-	19
Mammal (lg/vlg)	0	0	0	0	10	32	0	0	0	0	0	0	0	0	0	-	-	-	42
Mammal (unk. size)	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	-	-	-	3
Odocoileus sp.	4	1	0	0	0	0	0	0	1	0	2	0	0	0	0	-	-	-	8
Osteichthyes	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	-	-	-	2
Testudinata	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	-	-	-	5
Vertebrate-undiffer.	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	-	-	-	3
Total	4	1	2	1	25	42	1	2	1	1	5	5	3	1	1	-	-	-	95
Bivalves																			
Amblema plicata	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	8	0	25
Cyrtonaias sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	1	0	1
Lampsilis sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	6	0	8
Lampsilis hydiana	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	1	0	5
Unionacea	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	4	1	10
Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28	20	1	49

Table H-122. Debitage Recovery by Size and Material Type, AU2, 41CV88.

	Size (cm)						
Lithic Material	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Identified Types							
03-AM Gray	0	0	2	0	0	0	2
06-HL Tan	0	0	1	2	0	0	3
08-FH Yellow	1	6	1	2	1	1	12
09-HL Tr Brown	0	0	0	0	1	0	1
13-ER Flecked	0	0	0	0	1	0	1
14-FH Gray	0	0	2	1	4	0	7
15-Gry/Brn/Grn	0	0	1	1	0	0	2
17-Owl Crk Black	0	0	0	1	0	0	1
18-C Mottled	0	0	1	3	5	0	9
22-C Mott/Flecks	0	0	0	1	2	0	3
24-C Br Fossil	0	0	0	0	2	0	2
Subtotal	*1*	*6*	*8*	*11*	*16*	*1*	*43*
Unidentified Types							
Indet Black	1	2	0	1	0	0	4
Indet Dk Brown	0	2	2	1	1	0	6
Indet Dk Gray	10	8	15	1	2	0	36
Indet Lt Brown	1	5	10	9	2	0	27
Indet Lt Gray	1	7	1	2	3	0	14
Indet Misc.	3	5	9	4	0	0	21
Indet Mottled	0	3	1	5	10	2	21
Indet Trans	0	1	0	0	0	0	1
Indet White	0	0	0	0	1	0	1
Subtotal	*16*	*33*	*38*	*23*	*19*	*2*	*131*
Total	**17**	**39**	**46**	**34**	**35**	**3**	**174**

Table H-124. Debitage Cortex Characteristics by Material Type, AU2, 41CV88.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
03-AM Gray	0	2	2
06-HL Tan	2	1	3
08-FH Yellow	2	10	12
09-HL Tr Brown	0	1	1
13-ER Flecked	0	1	1
14-FH Gray	2	5	7
15-Gry/Brn/Grn	1	1	2
17-Owl Crk Black	1	0	1
18-C Mottled	7	2	9
22-C Mott/Flecks	2	1	3
24-C Br Fossil	2	0	2
Subtotal	*19*	*24*	*43*
Unidentified Types			
Indet Black	0	4	4
Indet Dk Brown	3	3	6
Indet Dk Gray	4	32	36
Indet Lt Brown	6	21	27
Indet Lt Gray	5	9	14
Indet Misc.	5	16	21
Indet Mottled	16	5	21
Indet Trans	0	1	1
Indet White	1	0	1
Subtotal	*40*	*91*	*131*
Total	**59**	**115**	**174**

Table H-123. Binomial Statistic Results, AU2, 41CV88.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
03-AM Gray	2	less	expected
06-HL Tan	3	less	expected
08-FH Yellow	12	expected	more
09-HL Tr Brown	1	less	expected
13-ER Flecked	1	less	expected
14-FH Gray	7	expected	expected
15-Gry/Brn/Grn	2	less	expected
17-Owl Crk Black	1	less	expected
18-C Mottled	9	expected	more
22-C Mott/Flecks	3	less	expected
24-C Br Fossil	2	less	expected
Total Indet	131	more	na

1. Expected minimum = 7; expected maximum = 22.
2. Expected minimum = 1; expected maximum = 8.

Table H-125. Lithic Tools, AU2, 41CV88.

	Tool Type			
Lithic Material	Crushing/Abrading	drill	late stage biface	Total
15-Gry/Brn/Grn	0	1	1	2
17-Owl Crk Black	0	0	1	1
Indet Dk Brown	1	0	0	1
Indet Lt Brown	0	0	1	1
Total	**1**	**1**	**3**	**5**

Table H-126. Faunal Recovery, AU2, 41CV88.

	Element															
Taxon	Carapace	Cranium	Indeterminate	Long bone, unident	Mandible	Metatarsal	Plastron	Radius	Rib	Scapula	Sesamoid	Zygomatic arch	left	right	unknown	Total
Vertebrates																
Artiodactyls (med)	0	0	0	2	0	1	0	0	0	1	1	0	-	-	-	5
Castor canadensis	0	0	0	0	0	0	0	0	0	0	0	1	-	-	-	1
Mammal (micro/s)	0	0	0	1	0	0	0	0	0	0	0	0	-	-	-	1
Mammal (small)	0	1	0	2	0	0	0	0	0	0	0	0	-	-	-	3
Mammal (med/lg)	0	0	0	8	0	0	0	0	1	0	0	0	-	-	-	9
Mammal (lg/vlg)	0	0	8	24	0	0	0	0	0	0	0	0	-	-	-	32
Odocoileus sp.	0	0	0	0	0	0	0	1	0	0	0	0	-	-	-	1
Sylvilagus sp.	0	0	0	0	2	0	0	0	0	1	0	0	-	-	-	3
Testudinata	1	0	0	0	0	0	1	0	0	0	0	0	-	-	-	2
Vertebrate-undiffer.	0	0	2	0	0	0	0	0	0	0	0	0	-	-	-	2
Total	**1**	**1**	**10**	**37**	**2**	**1**	**1**	**1**	**1**	**2**	**1**	**1**	-	-	-	**59**
Bivalves																
Amblema plicata	-	-	-	-	-	-	-	-	-	-	-	-	11	17	0	28
Lampsilis sp.	-	-	-	-	-	-	-	-	-	-	-	-	1	5	0	6
Lampsilis teres	-	-	-	-	-	-	-	-	-	-	-	-	1	1	0	2
Tritigonia verrucosa	-	-	-	-	-	-	-	-	-	-	-	-	2	0	0	2
Unionacea	-	-	-	-	-	-	-	-	-	-	-	-	3	2	1	6
Total	-	-	-	-	-	-	-	-	-	-	-	-	**18**	**25**	**1**	**44**

Table H-127. Debitage Recovery by Size and Material Type, AU3, 41CV88.

Lithic Material	Size (cm) 0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Identified Types						
02-C White	0	0	0	1	1	2
06-HL Tan	0	0	1	0	0	1
08-FH Yellow	2	0	0	0	0	2
10-HL Blue	0	0	1	0	0	1
14-FH Gray	0	0	1	1	0	2
15-Gry/Brn/Grn	0	0	0	2	0	2
17-Owl Crk Black	0	0	2	0	0	2
18-C Mottled	0	0	0	0	1	1
19-C Dr Gray	0	0	1	1	1	3
22-C Mott/Flecks	0	0	0	0	1	1
Subtotal	*2*	*0*	*6*	*5*	*4*	*17*
Unidentified Types						
Indet Black	0	1	0	0	0	1
Indet Dk Brown	0	4	2	0	0	6
Indet Dk Gray	2	9	5	0	0	16
Indet Lt Brown	5	1	4	1	2	13
Indet Lt Gray	2	1	2	1	1	7
Indet Misc.	0	3	1	0	0	4
Indet Mottled	0	0	1	4	2	7
Indet Trans	0	0	1	0	0	1
Indet White	0	1	2	2	0	5
Subtotal	*9*	*20*	*18*	*8*	*5*	*60*
Total	**11**	**20**	**24**	**13**	**9**	**77**

Table H-128. Binomial Statistic Results, AU3, 41CV88.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
02-C White	2	less	expected
06-HL Tan	1	less	expected
08-FH Yellow	2	less	expected
10-HL Blue	1	less	expected
14-FH Gray	2	less	expected
15-Gry/Brn/Grn	2	less	expected
17-Owl Crk Black	2	less	expected
18-C Mottled	1	less	expected
19-C Dr Gray	3	expected	expected
22-C Mott/Flecks	1	less	expected
Total Indet	60	more	na

1. Expected minimum = 3; expected maximum = 12.
2. Expected minimum = 0; expected maximum = 4

Table H-129 Debitage Cortex Characteristics by Material Type, AU3, 41CV88.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
02-C White	1	1	2
06-HL Tan	0	1	1
08-FH Yellow	0	2	2
10-HL Blue	0	1	1
14-FH Gray	2	0	2
15-Gry/Brn/Grn	0	2	2
17-Owl Crk Black	0	2	2
18-C Mottled	1	0	1
19-C Dr Gray	2	1	3
22-C Mott/Flecks	1	0	1
Subtotal	*7*	*10*	*17*
Unidentified Types			
Indet Black	0	1	1
Indet Dk Brown	0	6	6
Indet Dk Gray	4	12	16
Indet Lt Brown	2	11	13
Indet Lt Gray	1	6	7
Indet Misc.	3	1	4
Indet Mottled	4	3	7
Indet Trans	0	1	1
Indet White	1	4	5
Subtotal	*15*	*45*	*60*
Total	**22**	**55**	**77**

Table H-130. Faunal Recovery, AU3, 41CV88.

	Element											
Taxon	Carapace	Indeterminate	Long bone, unident.	Mandible	Metacarpal	Plastron	Tooth	Vertebra	left	right	unknown	Total
Vertebrates												
Artiodactyls (med)	0	0	0	0	1	0	0	0	-	-	-	1
Castor canadensis	0	0	0	0	0	0	1	0	-	-	-	1
Geomys bursarius	0	0	0	1	0	0	0	0	-	-	-	1
Mammal (sm/med)	0	0	2	0	0	0	0	0	-	-	-	2
Mammal (medium)	0	0	1	0	0	0	0	1	-	-	-	2
Mammal (med/lg)	0	7	1	0	0	0	0	0	-	-	-	8
Mammal (lg/vlg)	0	9	9	0	0	0	0	0	-	-	-	18
Serpentes	0	0	0	0	0	0	0	1	-	-	-	1
Testudinata	1	0	0	0	0	1	0	0	-	-	-	2
Vertebrate-undiffer.	0	1	0	0	0	0	0	0	-	-	-	1
Total	**1**	**17**	**13**	**1**	**1**	**1**	**1**	**2**	-	-	-	**37**
Bivalves												
Amblema plicata	-	-	-	-	-	-	-	-	10	5	0	15
Lampsilis sp.	-	-	-	-	-	-	-	-	2	2	0	4
Lampsilis teres	-	-	-	-	-	-	-	-	0	1	0	1
Quadrula apiculata	-	-	-	-	-	-	-	-	0	1	0	1
Tritigonia verrucosa	-	-	-	-	-	-	-	-	1	0	0	1
Unionacea	-	-	-	-	-	-	-	-	3	5	3	11
Total	-	-	-	-	-	-	-	-	**16**	**14**	**3**	**33**

Table H-131. Debitage Recovery by Size and Material Type, AU1, 41CV90.

	Size (cm)						
Lithic Material	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Identified Types							
06-HL Tan	0	0	1	0	1	0	2
08-FH Yellow	0	3	3	0	0	0	6
11-ER Flat	0	0	1	0	0	0	1
14-FH Gray	0	0	0	0	1	0	1
15-Gry/Brn/Grn	0	1	2	1	0	0	4
17-Owl Crk Black	0	0	1	0	0	0	1
23-C Mott/Banded	0	0	0	0	1	0	1
Subtotal	*0*	*4*	*8*	*1*	*3*	*0*	*16*
Unidentified Types							
Indet Dk Brown	0	2	2	1	0	0	5
Indet Dk Gray	3	0	2	0	1	0	6
Indet Lt Brown	0	6	3	2	5	1	17
Indet Lt Gray	1	4	7	2	1	0	15
Indet Misc.	0	1	1	0	0	0	2
Indet Mottled	0	1	0	1	0	0	2
Indet White	0	1	3	1	0	0	5
Subtotal	*4*	*15*	*18*	*7*	*7*	*1*	*52*
Total	**4**	**19**	**26**	**8**	**10**	**1**	**68**

Table H-132. Binomial Statistic Results, AU1, 41CV90.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
06-HL Tan	2	less	expected
08-FH Yellow	6	expected	expected
11-ER Flat	1	less	expected
14-FH Gray	1	less	expected
15-Gry/Brn/Grn	4	expected	expected
17-Owl Crk Black	1	less	expected
23-C Mott/Banded	1	less	expected
Total Indet	52	more	na

1. Expected minimum = 4; expected maximum = 14.
2. Expected minimum = 0; expected maximum = 5.

Table H-133. Debitage Cortex Characteristics by Material Type, AU1, 41CV90.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
06-HL Tan	0	2	2
08-FH Yellow	1	5	6
11-ER Flat	0	1	1
14-FH Gray	0	1	1
15-Gry/Brn/Grn	1	3	4
17-Owl Crk Black	0	1	1
23-C Mott/Banded	1	0	1
Subtotal	*3*	*13*	*16*
Unidentified Types			
Indet Dk Brown	0	5	5
Indet Dk Gray	1	5	6
Indet Lt Brown	9	8	17
Indet Lt Gray	3	12	15
Indet Misc.	1	1	2
Indet Mottled	2	0	2
Indet White	1	4	5
Subtotal	*17*	*35*	*52*
Total	**20**	**48**	**68**

Table H-134. Debitage Recovery by Size and Material Type, AU1, 41CV98.

	Size (cm)			
Lithic Material	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	Total
Unidentified Types				
Indet Dk Gray	0	0	1	1
Indet Lt Brown	0	0	1	1
Indet Lt Gray	2	3	4	9
Indet Mottled	0	0	1	1
Total	2	3	7	12

Table H-135. Debitage Cortex Characteristics by Material Type, AU1, 41CV98.

Lithic Material	Partial Cortex	No Cortex	Total
Unidentified Types			
Indet Dk Gray	1	0	1
Indet Lt Brown	1	0	1
Indet Lt Gray	1	8	9
Indet Mottled	0	1	1
Total	3	9	12

Table H-136. Faunal Recovery, AU1, 41CV98.

	Symmetry			
Bivalves	left	right	unknown	Total
Lampsilis sp.	8	9	0	17
Lampsilis teres	0	2	0	2
Lampsilis hydiana	2	1	0	3
Unionacea	0	0	2	2
Total	10	12	2	24

Table H-137. Debitage Recovery by Size and Material Type, AU2, 41CV98.

	Size (cm)				
Lithic Material	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Identified Types					
08-FH Yellow	0	0	0	1	1
Unidentified Types					
Indet Black	0	0	1	0	1
Indet Lt Brown	1	2	1	1	5
Indet Misc.	1	0	0	0	1
Indet Mottled	0	1	2	0	3
Subtotal	*2*	*3*	*4*	*1*	*10*
Total	2	3	4	2	11

Table H-138. Debitage Cortex Characteristics by Material Type, AU2, 41CV98.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
08-FH Yellow	1	0	1
Unidentified Types			
Indet Black	0	1	1
Indet Lt Brown	2	3	5
Indet Misc.	0	1	1
Indet Mottled	2	1	3
Total	5	6	11

Table H-139. Faunal Recovery, AU2, 41CV98.

Taxon	Element: Calcaneus	Indeterminate	Long bone, unident.	left	Total
Vertebrates					
Mammal (lg/vlg)	0	0	9	-	9
Odocoileus sp.	1	0	0	-	1
Vertebrate-undiffer.	0	4	0	-	4
Total	1	4	9	-	14
Bivalves					
Cyrtonaias sp.	-	-	-	1	1
Total	-	-	-	1	1

Table H-140. Faunal Recovery, AU3, 41CV98.

Bivalves	Symmetry: left	right	Total
Lampsilis sp.	5	4	9
Lampsilis teres	3	0	3
Lampsilis hydiana	3	2	5
Total	11	6	17

Table H-141. Debitage Recovery by Size and Material Type, AU1, 41CV99.

Lithic Material	Size (cm): <0.5	0.5-0.9	0.9-1.2	1.2-1.8	1.8-2.6	2.6-5.2	Total
Identified Types							
02-C White	0	0	0	0	1	1	2
03-AM Gray	0	0	0	0	1	0	1
06-HL Tan	0	0	6	17	19	3	45
08-FH Yellow	0	0	15	0	7	1	23
09-HL Tr Brown	0	0	0	0	0	2	2
11-ER Flat	0	0	0	0	0	1	1
14-FH Gray	0	0	1	0	1	1	3
15-Gry/Brn/Grn	0	1	2	5	5	2	15
17-Owl Crk Black	0	0	0	4	0	0	4
18-C Mottled	0	0	0	0	3	5	8
19-C Dr Gray	0	0	0	0	6	5	11
22-C Mott/Flecks	0	0	21	1	6	1	29
23-C Mott/Banded	0	0	0	0	2	0	2
24-C Br Fossil	0	0	0	0	0	1	1
Subtotal	*0*	*1*	*45*	*27*	*51*	*23*	*147*
Unidentified Types							
Indet Black	0	0	7	4	0	3	14
Indet Dk Brown	0	17	28	45	0	2	92
Indet Dk Gray	6	4	35	19	2	2	68
Indet Lt Brown	0	38	44	67	11	4	164
Indet Lt Gray	0	0	6	12	2	1	21
Indet Misc.	0	1	30	12	7	0	50
Indet Mottled	0	0	20	21	17	13	71
Indet Trans	0	0	4	7	1	2	14
Indet White	0	4	9	7	4	3	27
Subtotal	*6*	*64*	*183*	*194*	*44*	*30*	*521*
Total	6	65	228	221	95	53	668

Table H-142. Binomial Statistic Results, AU1, 41CV99.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
02-C White	2	less	less
03-AM Gray	1	less	less
06-HL Tan	45	expected	more
08-FH Yellow	23	less	more
09-HL Tr Brown	2	less	less
11-ER Flat	1	less	less
14-FH Gray	3	less	less
15-Gry/Brn/Grn	15	less	expected
17-Owl Crk Black	4	less	expected
18-C Mottled	8	less	expected
19-C Dr Gray	11	less	expected
22-C Mott/Flecks	29	less	more
23-C Mott/Banded	2	less	less
24-C Br Fossil	1	less	less
Total Indet	521	more	na

1. Expected minimum = 37; expected maximum = 57.
2. Expected minimum = 4; expected maximum = 17

Table H-143. Debitage Cortex Characteristics by Material Type, AU1, 41CV99.

Lithic Material	All Cortex	Partial Cortex	Indeterminate	No Cortex	Total
Identified Types					
02-C White	0	1	1	0	2
03-AM Gray	0	1	0	0	1
06-HL Tan	0	7	0	38	45
08-FH Yellow	0	2	0	21	23
09-HL Tr Brown	0	2	0	0	2
11-ER Flat	0	0	0	1	1
14-FH Gray	0	2	0	1	3
15-Gry/Brn/Grn	0	1	0	14	15
17-Owl Crk Black	0	4	0	0	4
18-C Mottled	0	5	0	3	8
19-C Dr Gray	0	7	0	4	11
22-C Mott/Flecks	0	4	1	24	29
23-C Mott/Banded	0	2	0	0	2
24-C Br Fossil	0	0	0	1	1
Subtotal	*0*	*38*	*2*	*107*	*147*
Unidentified Types					
Indet Black	0	3	0	11	14
Indet Dk Brown	0	13	0	79	92
Indet Dk Gray	0	16	0	52	68
Indet Lt Brown	0	45	0	119	164
Indet Lt Gray	0	3	0	18	21
Indet Misc.	0	5	1	44	50
Indet Mottled	0	46	0	25	71
Indet Trans	0	2	0	12	14
Indet White	1	6	0	20	27
Subtotal	*1*	*139*	*1*	*380*	*521*
Total	**1**	**177**	**3**	**487**	**668**

Table H-144. Projectile Points, AU1, 41CV99.

	Point Type			
Lithic Material	Bulverde	Ensor	Other Dart	Total
06-HL Tan	0	1	0	1
15-Gry/Brn/Grn	1	0	0	1
18-C Mottled	0	0	1	1
Indet Lt Brown	0	0	1	1
Indet Mottled	0	0	1	1
Total	**1**	**1**	**3**	**5**

Table H-145. Lithic Tools, AU1, 41CV99.

	Tool Type							
Lithic Material	Chopper Type A	Crushing/Abrading	edge modified	late stage biface	middle stage biface	side scraper	utilized	Total
06-HL Tan	0	0	1	0	0	0	2	3
09-HL Tr Brown	0	0	0	1	0	0	0	1
18-C Mottled	1	0	0	0	0	0	0	1
19-C Dr Gray	0	0	1	0	0	0	0	1
22-C Mott/Flecks	0	0	1	0	1	0	0	2
Indet Dk Brown	0	0	0	0	1	1	0	2
Indet Dk Gray	0	0	0	0	0	0	1	1
Indet Misc.	0	0	0	0	0	0	1	1
Indet Mottled	0	1	2	1	0	0	0	4
Indet Trans	0	0	0	0	0	0	1	1
Total	**1**	**1**	**5**	**2**	**2**	**1**	**5**	**17**

Table H-146. Faunal Recovery, AU1, 41CV99.

	Element																									
Taxon	Calcaneus	Carapace	Carpal	Carpal/Tarsal	Cranium	Femur	Humerus	Indeterminate	Long bone, unident.	Mandible	Metapodial	Pelvis	Phalange	Plastron	Radius	Rib	Scapula	Tibia	Tibiotarsus	Tooth	Ulna	Vertebra	left	right	unknown	Total
Vertebrates																										
Antilocapra americana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	-	-	-	1
Artiodactyls (med)	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	-	-	-	2
Canis sp.	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	3
Emydidae	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	1
Leporidae	0	0	0	18	7	3	1	0	113	13	4	19	1	0	7	0	5	16	0	15	0	5	-	-	-	227
Lepus californicus	6	0	0	0	5	18	17	0	0	6	0	30	0	0	41	0	12	22	0	7	13	9	-	-	-	186
Mammal (small)	0	0	0	0	0	0	0	0	3	0	0	0	0	0	1	0	0	0	0	0	0	0	-	-	-	4
Mammal (sm/med)	0	0	0	0	0	0	0	27	20	0	0	0	0	0	0	0	0	0	0	0	1	0	-	-	-	48
Mammal (medium)	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	3
Mammal (med/lg)	0	0	0	0	2	0	0	16	1	1	0	0	0	0	0	2	0	0	0	0	0	0	-	-	-	22
Mammal (lg/vlg)	0	0	0	0	0	0	0	18	86	0	0	0	0	0	0	0	0	0	0	0	0	1	-	-	-	105
Mephitis mephitis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	-	-	-	1
Odocoileus sp.	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	6	1	0	-	-	-	10
Sylvilagus sp.	0	0	0	0	0	11	14	0	0	4	0	10	0	0	3	0	1	9	0	0	6	0	-	-	-	58
Testudinata	0	1	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	-	-	-	4
Vertebrate-undifier.	0	0	0	0	0	0	0	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	26
Total	6	2	1	18	14	32	33	87	225	28	4	59	2	2	54	2	18	48	1	29	21	15	-	-	-	701
Bivalves																										
Amblema plicata	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32	33	0	65
Amblema sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25	16	0	41
Cyrtonaias sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	1	0	1
Lampsilinae	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	0	0	3
Lampsilis s[illegible]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	5	0	8
Lampsilis [illegible]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	0	1
Megalonaias n[illegible]vosa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	0	2
Potamilus purpuratus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	0	1
Quadrula sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	0	5
Toxolasma sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	0	3
Tritigonia verrucosa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	0	2
Unionacea	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	15	5	35
Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	87	75	5	167

Table H-147. Debitage Recovery by Size and Material Type, AU3, 41CV99

Lithic Material	Size (cm) 0.5-0.9	0.9-1.2	1.2-1.8	1.8-2.6	2.6-5.2	Total
Identified Types						
06-HL Tan	0	0	3	2	1	6
08-FH Yellow	0	0	1	0	0	1
09-HL Tr Brown	0	0	1	0	0	1
Subtotal	*0*	*0*	*5*	*2*	*1*	*8*
Unidentified Types						
Indet Black	1	1	0	0	0	2
Indet Lt Brown	0	1	0	0	0	1
Indet Lt Gray	0	0	1	0	0	1
Indet Mottled	0	1	0	0	0	1
Indet White	0	0	0	1	0	1
Subtotal	*1*	*3*	*1*	*1*	*0*	*6*
Total	**1**	**3**	**6**	**3**	**1**	**14**

Table H-148. Binomial Statistic Results, AU3, 41CV99.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
06-HL Tan	6	expected	more
08-FH Yellow	1	expected	expected
09-HL Tr Brown	1	expected	expected
Total Indet	6	expected	na

1. Expected minimum = 1; expected maximum = 7.
2. Expected minimum = 0; expected maximum = 5.

Table H-149. Debitage Cortex Characteristics by Material Type, AU3, 41CV99.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
06-HL Tan	1	5	6
08-FH Yellow	1	0	1
09-HL Tr Brown	1	0	1
Subtotal	*3*	*5*	*8*
Unidentified Types			
Indet Black	0	2	2
Indet Lt Brown	0	1	1
Indet Lt Gray	0	1	1
Indet Mottled	1	0	1
Indet White	1	0	1
Subtotal	*2*	*4*	*6*
Total	**5**	**9**	**14**

Table H-150. Faunal Recovery, AU3, 41CV99.

Taxon	Element: Long bone, unident.	Element: right	Total
Vertebrates			
Mammal (lg/vlg)	1	0	1
Total	1	0	1
Bivalves			
Amblema plicata	0	1	1
Unionacea	0	1	1
Total	0	2	2

Table H-151. Debitage Recovery by Size and Material Type, AU1, 41CV115.

Lithic Material	Size (cm): <0.5	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Identified Types								
02-C White	0	1	0	0	0	0	0	1
06-HL Tan	0	0	0	10	0	5	0	15
08-FH Yellow	7	35	107	261	184	133	2	729
10-HL Blue	0	0	0	0	0	1	0	1
14-FH Gray	0	0	0	0	4	3	0	7
15-Gry/Brn/Grn	0	0	0	4	9	9	2	24
17-Owl Crk Black	0	1	2	0	0	0	0	3
18-C Mottled	0	0	0	0	0	1	0	1
19-C Dr Gray	0	0	0	2	0	0	0	2
22-C Mott/Flecks	0	0	0	0	0	1	0	1
28-Table Rock Flat	0	0	0	0	0	2	0	2
Subtotal	*7*	*37*	*109*	*277*	*197*	*155*	*4*	*786*
Unidentified Types								
Indet Black	0	0	6	0	0	0	0	6
Indet Dk Brown	0	22	4	57	30	14	1	128
Indet Dk Gray	27	26	27	74	34	3	0	191
Indet Lt Brown	13	45	125	99	40	22	0	344
Indet Lt Gray	7	3	9	22	9	4	0	54
Indet Misc.	8	148	104	92	57	14	0	423
Indet Mottled	0	0	0	0	6	2	0	8
Indet Trans	0	0	1	0	0	0	0	1
Indet White	0	0	3	0	0	1	0	4
Subtotal	*55*	*244*	*279*	*344*	*176*	*60*	*1*	*1159*
Limestone	0	0	0	0	2	0	0	2
Total	62	281	388	621	375	215	5	1947

Table H-152. Binomial Statistic Results, AU1, 41CV115.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
02-C White	1	less	less
06-HL Tan	15	less	less
08-FH Yellow	729	more	more
10-HL Blue	1	less	less
14-FH Gray	7	less	less
15-Gry/Brn/Grn	24	less	less
17-Owl Crk Black	3	less	less
18-C Mottled	1	less	less
19-C Dr Gray	2	less	less
22-C Mott/Flecks	1	less	less
28-Table Rock Flat	2	less	less
Limestone	2	less	less
Total Indet	1159	more	na

1. Expected minimum = 127; expected maximum 173.
2. Expected minimum = 50; expected maximum 80.

Table H-153. Debitage Cortex Characteristics by Material Type, AU1, 41CV115.

Lithic Material	All Cortex	Partial Cortex	No Cortex	Total
Identified Types				
02-C White	0	1	0	1
06-HL Tan	0	8	7	15
08-FH Yellow	0	184	545	729
10-HL Blue	0	0	1	1
14-FH Gray	0	1	6	7
15-Gry/Brn/Grn	1	13	10	24
17-Owl Crk Black	0	1	2	3
18-C Mottled	0	0	1	1
19-C Dr Gray	0	0	2	2
22-C Mott/Flecks	0	1	0	1
28-Table Rock Flat	0	2	0	2
Subtotal	*1*	*211*	*574*	*786*
Unidentified Types				
Indet Black	0	4	2	6
Indet Dk Brown	1	34	93	128
Indet Dk Gray	3	46	142	191
Indet Lt Brown	0	105	239	344
Indet Lt Gray	1	17	36	54
Indet Misc.	4	117	302	423
Indet Mottled	0	6	2	8
Indet Trans	0	1	0	1
Indet White	0	2	2	4
Subtotal	*9*	*332*	*818*	*1159*
Limestone	0	2	0	2
Total	**10**	**545**	**1392**	**1947**

Table H-154. Projectile Points, AU1, 41CV115.

	Point Type				
Lithic Material	Other Arrow	Other Dart	Scallorn	Uvalde	Total
06-HL Tan	0	0	0	1	1
15-Gry/Brn/Grn	1	0	0	0	1
Indet Lt Brown	0	1	0	0	1
Indet Misc.	0	0	1	0	1
Total	**1**	**1**	**1**	**1**	**4**

Table H-155. Lithic Tools, AU1, 41CV115.

	Core Type	Tool Type						
Lithic Material	single platform	edge modified	late stage biface	metate	middle stage biface	spokeshave	utilized	Total
06-HL Tan	0	0	0	0	1	1	0	2
08-FH Yellow	0	1	0	0	0	0	0	1
15-Gry/Brn/Grn	0	0	0	0	0	0	1	1
Indet Dk Brown	0	1	0	0	0	0	0	1
Indet Lt Brown	1	1	0	0	0	0	1	3
Indet Misc.	0	1	2	0	0	0	0	3
Indet Mottled	0	0	0	0	0	0	1	1
Limestone	0	0	0	1	0	0	0	1
Total	**1**	**4**	**2**	**1**	**1**	**1**	**3**	**13**

Table H-156. Faunal Recovery, AU1, 41CV115.

	Element																							
Taxon	Antler	Carapace	Cranium	Femur	Humerus	Indeterminate	Long bone, unident.	Mandible	Metacarpal	Metapodial	Metatarsal	Pelvis	Phalange	Radius	Rib	Scapula	Tibia	Tooth	Ulna	Vertebra	left	right	unknown	Total
Vertebrates																								
Artiodactyls (med)	0	0	0	1	0	0	0	0	1	2	4	0	1	0	0	2	1	0	1	0	-	-	-	13
Aves (small)	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	1
Aves (medium)	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	1
Aves (large)	0	0	0	0	0	4	1	0	0	0	0	0	0	0	0	0	1	0	0	0	-	-	-	6
Canis sp.	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	-	-	-	3
Leporidae	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	-	-	-	2
Lepus californicus	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	-	-	-	1
Mammal (small)	0	0	0	0	0	5	8	0	0	0	0	0	0	0	1	0	0	0	0	1	-	-	-	15
Mammal (sm/med)	0	0	1	0	0	5	45	0	0	0	0	2	1	0	0	0	0	0	0	0	-	-	-	54
Mammal (medium)	0	0	0	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	20
Mammal (med/lg)	0	0	0	0	0	0	10	1	0	0	0	0	0	0	2	1	0	0	0	0	-	-	-	14
Mammal (lg/vlg)	0	0	0	0	0	1	92	0	0	0	0	0	0	0	6	0	0	0	0	2	-	-	-	101
Mammal (very lg)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	-	-	-	1
Mammal (unk. size)	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	3
Odocoileus sp.	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	-	-	-	2
Osteichthyes (sm)	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	1
Sylvilagus sp.	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	1
Testudinata	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	2
Vertebrate-undiffer.	0	0	0	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	30
Total	1	2	1	1	1	50	178	3	1	2	4	2	3	2	9	3	2	1	1	4	-	-	-	271
Bivalves																								
Amblema plicata	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	0	3
Amblema sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	0	2
Lampsilis sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	3	3
Lampsilis hydiana	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	2	0	2
Tritigonia verrucosa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	1	0	1
Unionacea	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0	5	7
Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	5	8	19

Table H-157. Debitage Recovery by Size and Material Type, AU2, 41CV115.

Lithic Material	Size (cm) <0.5	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	>5.2	Total
Identified Types								
06-HL Tan	0	0	0	0	4	0	0	4
08-FH Yellow	183	40	25	117	76	63	3	507
14-FH Gray	0	0	0	8	2	0	0	10
15-Gry/Brn/Grn	0	0	6	0	10	4	0	20
Subtotal	*183*	*40*	*31*	*125*	*92*	*67*	*3*	*541*
Unidentified Types								
Indet Dk Brown	0	0	5	26	4	3	0	38
Indet Dk Gray	280	66	2	3	3	0	0	354
Indet Lt Brown	326	84	23	28	16	11	0	488
Indet Lt Gray	0	0	1	8	4	1	0	14
Indet Misc.	1	55	1	18	2	1	0	58
Indet Mottled	0	0	0	1	0	0	0	1
Indet Trans	0	0	0	1	0	0	0	1
Indet White	0	0	0	2	1	1	0	4
Subtotal	*607*	*185*	*32*	*87*	*30*	*17*	*0*	*958*
Total	**790**	**225**	**63**	**212**	**122**	**84**	**3**	**1499**

Table H-158. Binomial Statistic Results, AU2, 41CV115.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
06-HL Tan	4	less	less
08-FH Yellow	507	more	more
14-FH Gray	10	less	less
15-Gry/Brn/Grn	20	less	less
Total Indet	958	more	na

1. Expected minimum = 269; expected maximum 330.
2. Expected minimum = 115; expected maximum 155.

Table H-159. Debitage Cortex Characteristics by Material Type, AU2, 41CV115.

Lithic Material	All Cortex	Partial Cortex	Indeterminate	No Cortex	Total
Identified Types					
06-HL Tan	0	3	0	1	4
08-FH Yellow	0	100	3	404	507
14-FH Gray	0	0	0	10	10
15-Gry/Brn/Grn	0	8	0	12	20
Subtotal	*0*	*111*	*3*	*427*	*541*
Unidentified Types					
Indet Dk Brown	0	15	0	23	38
Indet Dk Gray	0	5	0	349	354
Indet Lt Brown	2	88	0	398	488
Indet Lt Gray	0	5	0	9	14
Indet Misc.	0	56	0	2	58
Indet Mottled	0	1	0	0	1
Indet Trans	0	0	0	1	1
Indet White	0	2	0	2	4
Subtotal	*2*	*172*	*0*	*784*	*958*
Total	**2**	**283**	**3**	**1211**	**1499**

Table H-160. Projectile Points, AU2, 41CV115.

Lithic Material	Point Type Other Arrow	Other Dart	Perdiz	Total
06-HL Tan	0	1	0	1
15-Gry/Brn/Grn	0	0	1	1
17-Owl Crk Black	1	0	0	1
Total	1	1	1	3

Table H-161. Lithic Tools, AU2, 41CV115.

	Core Type	Tool Type						
Lithic Material	multiple platform	drill	edge modified	finished biface	late stage biface	side scraper	utilized	Total
06-HL Tan	0	1	0	0	0	0	0	1
08-FH Yellow	0	0	0	0	0	1	1	2
15-Gry/Brn/Grn	0	0	0	0	1	0	0	1
Indet Lt Brown	0	0	0	1	1	0	0	2
Indet Misc.	1	0	0	0	0	0	0	1
Indet Mottled	0	0	1	0	1	0	0	2
Indet White	0	0	0	0	0	0	1	1
Total	**1**	**1**	**1**	**1**	**3**	**1**	**2**	**10**

Table H-162. Faunal Recovery, AU2, 41CV115.

	Element									
Taxon	Carapace	Cranium	Indeterminate	Long bone, unident.	Metapodial	Metatarsal	Radius	Rib	Tooth	Total
Vertebrates										
Artiodactyls (med)	0	0	0	0	1	1	0	0	1	3
Leporidae	0	0	0	0	0	0	1	0	0	1
Mammal (sm/med)	0	0	12	53	0	0	0	1	0	66
Mammal (med/lg)	0	0	1	22	0	0	0	8	0	31
Mammal (lg/vlg)	0	0	0	19	0	0	0	0	0	19
Mammal (unk. size)	0	0	2	0	0	0	0	0	0	2
Mustelidae	0	1	0	0	0	0	0	0	0	1
Odocoileus sp.	0	0	0	0	0	0	0	0	1	1
Sylvilagus sp.	0	0	0	0	0	0	0	0	1	1
Testudinata	1	0	0	0	0	0	0	0	0	1
Vertebrate-undiffer.	0	0	87	0	0	0	0	0	0	87
Total	**1**	**1**	**102**	**94**	**1**	**1**	**1**	**9**	**3**	**213**

Table H-163. Debitage Recovery by Size and Material Type, AU3, 41CV115.

	Size (cm)						
Lithic Material	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Identified Types							
08-FH Yellow	0	1	12	3	1	0	17
15-Gry/Brn/Grn	0	0	0	0	0	1	1
Subtotal	*0*	*1*	*12*	*3*	*1*	*1*	*18*
Unidentified Types							
Indet Dk Brown	0	1	0	1	0	0	2
Indet Dk Gray	0	1	2	0	0	0	3
Indet Lt Brown	0	4	4	0	2	0	10
Indet Lt Gray	0	0	1	0	0	0	1
Indet Misc.	3	0	2	2	0	0	7
Indet Mottled	0	0	2	2	0	0	4
Subtotal	*3*	*6*	*11*	*5*	*2*	*0*	*27*
Total	**3**	**7**	**23**	**8**	**3**	**1**	**45**

Table H-164. Binomial Statistic Results, AU3, 41CV115.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
08-FH Yellow	17	expected	more
15-Gry/Brn/Grn	1	less	less
Total Indet	27	more	na

1. Expected minimum = 9; expected maximum 21.

2. Expected minimum = 5; expected maximum 13.

Table H-165. Debitage Cortex Characteristics by Material Type, AU3, 41CV115.

Lithic Material	All Cortex	Partial Cortex	Indeterminate	No Cortex	Total
Identified Types					
08-FH Yellow	0	1	0	16	17
15-Gry/Brn/Grn	0	1	0	0	1
Subtotal	*0*	*2*	*0*	*16*	*18*
Unidentified Types					
Indet Dk Brown	0	0	0	2	2
Indet Dk Gray	0	2	0	1	3
Indet Lt Brown	0	6	0	4	10
Indet Lt Gray	0	0	0	1	1
Indet Misc.	1	3	3	0	7
Indet Mottled	0	2	0	2	4
Subtotal	*1*	*13*	*3*	*10*	*27*
Total	**1**	**15**	**3**	**26**	**45**

Table H-166. Faunal Recovery, AU3, 41CV115.

Taxon	Element: Indeterminate	Element: Long bone, unident.	Total
Vertebrates			
Mammal (lg/vlg)	1	4	5
Vertebrate-undiffer.	1	0	1
Total	**2**	**4**	**6**

Table H-167. Debitage Recovery by Size and Material Type, AU1, 41CV117.

Lithic Material	Size (cm) 0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Identified Types						
04-7 Mile Novac	0	0	0	0	1	1
06-HL Tan	0	1	2	3	0	6
14-FH Gray	0	0	1	0	0	1
18-C Mottled	0	0	2	0	0	2
19-C Dr Gray	0	0	0	1	0	1
Subtotal	*0*	*1*	*5*	*4*	*1*	*11*
Unidentified Types						
Indet Dk Brown	1	0	0	1	1	3
Indet Dk Gray	1	1	1	1	0	4
Indet Lt Brown	5	7	10	8	10	40
Indet Lt Gray	0	0	0	2	4	6
Indet Misc.	1	8	0	0	0	9
Indet Mottled	0	0	1	2	2	5
Indet White	0	1	2	1	0	4
Subtotal	*8*	*17*	*14*	*15*	*17*	*71*
Total	**8**	**18**	**19**	**19**	**18**	**82**

Table H-168. Binomial Statistic Results, AU1, 41CV117.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
04-7 Mile Novac	1	less	expected
06-HL Tan	6	less	more
14-FH Gray	1	less	expected
18-C Mottled	2	less	expected
19-C Dr Gray	1	less	expected
Total Indet	71	more	na

1. Expected minimum = 7; expected maximum = 20.
2. Expected minimum = 0; expected maximum = 5.

Table H-169. Debitage Cortex Characteristics by Material Type, AU1, 41CV117.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
04-7 Mile Novac	1	0	1
06-HL Tan	0	6	6
14-FH Gray	0	1	1
18-C Mottled	0	2	2
19-C Dr Gray	0	1	1
Subtotal	*1*	*10*	*11*
Unidentified Types			
Indet Dk Brown	2	1	3
Indet Dk Gray	0	4	4
Indet Lt Brown	12	28	40
Indet Lt Gray	1	5	6
Indet Misc.	0	9	9
Indet Mottled	3	2	5
Indet White	0	4	4
Subtotal	*18*	*53*	*71*
Total	**19**	**63**	**82**

Table H-170. Lithic Tools, AU1, 41CV117.

	Tool Type			
Lithic Material	edge modified	late stage biface	utilized	Total
06-HL Tan	1	1	1	3
Indet Lt Gray	0	0	1	1
Total	**1**	**1**	**2**	**4**

Table H-171 Faunal Recovery, AU1, 41CV117.

	Element						
Taxon	Indeterminate	Long bone, unident.	Metapodial	Pelvis	left	right	Total
Vertebrates							
Artiodactyls (med)	0	0	1	1	0	0	2
Mammal (med/lg)	3	0	0	0	0	0	3
Mammal (lg/vlg)	0	5	0	0	0	0	5
Total	**3**	**5**	**1**	**1**	**0**	**0**	**10**
Bivalves							
Amblema sp.	0	0	0	0	1	1	2
Total	**0**	**0**	**0**	**0**	**1**	**1**	**2**

Table H-172. Debitage Recovery by Size and Material Type, AU2, 41CV117.

	Size (cm)							
Lithic Material	<0.5	0.5-0.9	0.9-1.2	1.2-1.8	1.8-2.6	2.6-5.2	>5.2	Total
Identified Types								
02-C White	0	0	0	0	0	2	0	2
03-AM Gray	0	0	0	0	1	0	0	1
04-7 Mile Novac	0	0	0	2	0	0	0	2
06-HL Tan	0	0	21	23	2	2	0	48
07-Foss Pale Brown	0	0	0	1	0	0	0	1
08-FH Yellow	0	0	0	2	2	1	0	5
14-FH Gray	0	0	0	0	1	0	0	1
16-Leona Park	0	0	0	0	1	0	0	1
17-Owl Crk Black	0	0	0	1	0	0	0	1
18-C Mottled	0	0	0	0	0	1	0	1
Subtotal	*0*	*0*	*21*	*29*	*7*	*6*	*0*	*63*
Unidentified Types								
Indet Black	0	0	3	0	2	0	0	5
Indet Dk Brown	1	4	1	12	1	0	0	19
Indet Dk Gray	0	0	6	4	4	1	0	15
Indet Lt Brown	0	16	28	14	14	1	0	73
Indet Lt Gray	0	1	3	7	6	0	0	17
Indet Misc.	0	1	15	25	0	0	0	41
Indet Mottled	0	0	2	8	3	2	1	16
Indet White	0	0	0	0	1	0	0	1
Subtotal	*1*	*22*	[illegible]	*70*	*31*	*4*	*1*	*187*
Total	**1**	**22**	**79**	**99**	**38**	**10**	**1**	**250**

Table H-173. Binomial Statistic Results, AU2, 41CV117.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
02-C White	2	less	expected
03-AM Gray	1	less	less
04-7 Mile Novac	2	less	expected
06-HL Tan	48	more	more
07-Foss Pale Brown	1	less	less
08-FH Yellow	5	less	expected
14-FH Gray	1	less	less
16-Leona Park	1	less	less
17-Owl Crk Black	1	less	less
18-C Mottled	1	less	less
Total Indet	187	more	na

1. Expected minimum = 14; expected maximum = 32.
2. Expected minimum = 2; expected maximum = 11.

Table H-174. Debitage Cortex Characteristics by Material Type, AU2, 41CV117.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
02-C White	0	2	2
03-AM Gray	0	1	1
04-7 Mile Novac	2	0	2
06-HL Tan	0	48	48
07-Foss Pale Brown	0	1	1
08-FH Yellow	4	1	5
14-FH Gray	1	0	1
16-Leona Park	1	0	1
17-Owl Crk Black	0	1	1
18-C Mottled	0	1	1
Subtotal	*8*	*55*	*63*
Unidentified Types			
Indet Black	0	5	5
Indet Dk Brown	0	19	19
Indet Dk Gray	4	11	15
Indet Lt Brown	12	61	73
Indet Lt Gray	6	11	17
Indet Misc.	5	36	41
Indet Mottled	11	5	16
Indet White	0	1	1
Subtotal	*38*	*149*	*187*
Total	**46**	**204**	**250**

Table H-175. Lithic Tools, AU2, 41CV117.

	Tool Type					
Lithic Material	finished biface	late stage biface	side scraper	spokeshave	utilized	Total
06-HL Tan	0	0	0	1	0	1
17-Owl Crk Black	1	0	0	0	0	1
18-C Mottled	0	1	0	0	0	1
22-C Mott/Flecks	0	0	1	0	0	1
Indet Dk Brown	0	0	1	0	1	2
Indet Lt Brown	0	0	0	0	1	1
Total	**1**	**1**	**2**	**1**	**2**	**7**

Table H-176. Faunal Recovery, AU2, 41CV117.

	Element			
Taxon	Indeterminate	Long bone, unident.	unknown	Total
Vertebrates				
Mammal (medium)	0	1	0	1
Mammal (lg/vlg)	4	17	0	21
Mammal (very lg)	1	0	0	1
Total	**5**	**18**	**0**	**23**
Bivalves				
Unionacea	0	0	1	1
Total	**0**	**0**	**1**	**1**

Table H-177. Debitage Recovery by Size and Material Type, AU3, 41CV117.

Lithic Material	Size (cm) <0.5	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Identified Types								
04-7 Mile Novac	0	0	0	0	1	2	0	3
06-HL Tan	0	3	3	7	12	5	0	30
07-Foss Pale Brown	0	0	0	0	0	1	0	1
08-FH Yellow	0	0	1	2	0	0	0	3
14-FH Gray	0	0	0	0	1	1	0	2
18-C Mottled	0	0	1	0	3	1	1	6
Subtotal	*0*	*3*	*5*	*9*	*17*	*10*	*1*	*45*
Unidentified Types								
Indet Black	0	0	0	1	0	0	0	1
Indet Dk Brown	0	4	14	9	2	1	0	30
Indet Dk Gray	0	1	11	16	4	1	0	33
Indet Lt Brown	0	12	30	51	22	1	0	116
Indet Lt Gray	0	0	4	6	10	4	0	24
Indet Misc.	0	4	15	7	1	0	0	27
Indet Mottled	0	0	0	2	8	4	0	14
Indet Trans	1	0	0	0	0	0	0	1
Indet White	0	0	1	5	1	0	0	7
Subtotal	*1*	*21*	*75*	*97*	*48*	*11*	*0*	*253*
Total	**1**	**24**	**80**	**106**	**65**	**21**	**1**	**298**

Table H-178. Binomial Statistic Results, AU3, 41CV117.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
04-7 Mile Novac	3	less	expected
06-HL Tan	30	less	more
07-Foss Pale Brown	1	less	less
08-FH Yellow	3	less	expected
14-FH Gray	2	less	less
18-C Mottled	6	less	expected
Total Indet	253	more	na

1. Expected minimum = 31; expected maximum = 54.

2. Expected minimum = 3; expected maximum = 13.

Table H-179. Debitage Cortex Characteristics by Material Type, AU3, 41CV117.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
04-7 Mile Novac	2	1	3
06-HL Tan	6	24	30
07-Foss Pale Brown	1	0	1
08-FH Yellow	0	3	3
14-FH Gray	1	1	2
18-C Mottled	2	4	6
Subtotal	*12*	*33*	*45*
Unidentified Types			
Indet Black	0	1	1
Indet Dk Brown	4	26	30
Indet Dk Gray	3	30	33
Indet Lt Brown	19	97	116
Indet Lt Gray	9	15	24
Indet Misc.	5	22	27
Indet Mottled	9	5	14
Indet Trans	0	1	1
Indet White	4	3	7
Subtotal	*53*	*200*	*253*
Total	**65**	**232**	**298**

Table H-180. Lithic Tools, AU3, 41CV117.

Lithic Material	Core Type: multiple platform	Tool Type: finished biface	Tool Type: late stage biface	Tool Type: middle stage biface	Tool Type: utilized	Total
06-HL Tan	0	0	1	0	0	1
15-Gry/Brn/Grn	0	1	0	0	0	1
18-C Mottled	1	0	0	0	0	1
Indet Dk Brown	0	0	0	1	0	1
Indet Dk Gray	0	0	0	0	1	1
Indet Lt Gray	0	0	0	0	1	1
Total	**1**	**1**	**1**	**1**	**2**	**6**

Table H-181. Faunal Recovery, AU3, 41CV117.

Taxon	Element: Indeterminate	Element: Long bone, unident.	Element: Tooth	Element: right	Element: unknown	Total
Vertebrates						
Bos/Bison	0	0	1	0	0	1
Mammal (lg/vlg)	2	8	0	0	0	10
Vertebrate-undiffer.	3	0	0	0	0	3
Total	**5**	**8**	**1**	**0**	**0**	**14**
Bivalves						
Amblema plicata	0	0	0	1	0	1
Unionacea	0	0	0	0	1	1
Total	**0**	**0**	**0**	**1**	**1**	**2**

Table H-182. Debitage Recovery by Size and Material Type, AU4, 41CV117.

Lithic Material	Size (cm): 0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Identified Types						
04-7 Mile Novac	0	0	0	0	1	1
06-HL Tan	0	0	1	2	3	6
08-FH Yellow	0	1	0	0	0	1
18-C Mottled	0	0	1	0	2	3
Subtotal	*0*	*1*	*2*	*2*	*6*	*11*
Unidentified Types						
Indet Black	1	0	0	0	0	1
Indet Dk Brown	0	0	0	1	0	1
Indet Dk Gray	0	0	0	2	0	2
Indet Lt Brown	0	2	2	4	0	8
Indet Lt Gray	0	0	1	1	0	2
Indet Misc.	0	2	1	0	0	3
Indet Mottled	0	0	0	1	0	1
Indet White	1	0	0	0	0	1
Subtotal	*2*	*4*	*4*	*9*	*0*	*19*
Total	**2**	**5**	**6**	**11**	**6**	**30**

Table H-183. Binomial Statistic Results, AU4, 41CV117.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
04-7 Mile Novac	1	less	expected
06-HL Tan	6	expected	expected
08-FH Yellow	1	less	expected
18-C Mottled	3	expected	expected
Total Indet	19	more	na

1. Expected minimum = 2; expected maximum = 11.
2. Expected minimum = 0; expected maximum = 6.

Table H-184. Debitage Cortex Characteristics by Material Type, AU4, 41CV117.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
04-7 Mile Novac	1	0	1
06-HL Tan	3	3	6
08-FH Yellow	0	1	1
18-C Mottled	2	1	3
Subtotal	*6*	*5*	*11*
Unidentified Types			
Indet Black	0	1	1
Indet Dk Brown	0	1	1
Indet Dk Gray	2	0	2
Indet Lt Brown	3	5	8
Indet Lt Gray	2	0	2
Indet Misc.	2	1	3
Indet Mottled	1	0	1
Indet White	0	1	1
Subtotal	*10*	*9*	*19*
Total	**16**	**14**	**30**

Table H-185. Debitage Recovery by Size and Material Type, AU1, 41CV125.

	Size (cm)							
Lithic Material	<0.5	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Identified Types								
02-C White	0	0	0	0	12	7	0	19
06-HL Tan	0	0	0	2	3	0	0	5
07-Foss Pale Brown	0	0	0	0	1	2	1	4
08-FH Yellow	0	1	0	16	1	1	0	19
13-ER Flecked	0	0	0	1	0	0	0	1
14-FH Gray	0	1	2	1	0	0	0	4
15-Gry/Brn/Grn	0	0	2	7	1	1	0	11
25-C Br Fleck	0	0	0	0	0	1	0	1
26-C Striated	0	0	0	0	0	4	0	4
27-C Novaculite	0	0	0	0	2	1	0	3
Subtotal	*0*	*2*	*4*	*27*	*20*	*17*	*1*	*71*
Unidentified Types								
Indet Dk Brown	0	0	0	3	1	0	0	4
Indet Dk Gray	0	1	0	8	0	0	0	9
Indet Lt Brown	2	14	44	49	17	5	0	131
Indet Lt Gray	0	9	0	12	7	4	0	32
Indet Misc.	0	9	46	49	12	0	0	116
Indet Mottled	0	0	5	28	29	14	0	76
Indet White	0	0	3	4	3	1	0	11
Subtotal	*2*	*33*	*98*	*153*	*69*	*24*	*0*	*379*
Total	**2**	**35**	**102**	**180**	**89**	**41**	**1**	**450**

Table H-186. Binomial Statistic Results, AU1, 41CV125.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
02-C White	19	less	more
06-HL Tan	5	less	expected
07-Foss Pale Brown	4	less	expected
08-FH Yellow	19	less	more
13-ER Flecked	1	less	less
14-FH Gray	4	less	expected
15-Gry/Brn/Grn	11	less	expected
25-C Br Fleck	1	less	less
26-C Striated	4	less	expected
27-C Novaculite	3	less	expected
Total indet	379	more	na

1. Expected minimum = 29; expected maximum = 53.

2. Expected minimum = 3; expected maximum = 12.

Table H-187. Debitage Cortex Characteristics by Material Type, AU1, 41CV125.

Lithic Material	All Cortex	Partial Cortex	No Cortex	Indeterminate	Total
Identified Types					
02-C White	0	9	10	0	19
06-HL Tan	0	2	3	0	5
07-Foss Pale Brown	0	3	1	0	4
08-FH Yellow	0	8	11	0	19
13-ER Flecked	0	0	1	0	1
14-FH Gray	0	1	3	0	4
15-Gry/Brn/Grn	0	2	9	0	11
25-C Br Fleck	0	0	1	0	1
26-C Striated	0	3	1	0	4
27-C Novaculite	0	0	3	0	3
Subtotal	*0*	*28*	*43*	*0*	*71*
Unidentified Types					
Indet Dk Brown	0	3	1	0	4
Indet Dk Gray	0	2	7	0	9
Indet Lt Brown	0	9	122	0	131
Indet Lt Gray	0	8	24	0	32
Indet Misc.	1	36	77	2	116
Indet Mottled	0	63	13	0	76
Indet White	0	5	6	0	11
Subtotal	*1*	*126*	*250*	*2*	*379*
Total	**1**	**154**	**293**	**2**	**450**

Table H-188. Lithic Tools, AU1, 41CV125.

	Tool Type				
Lithic Material	Crushing/Abrading	Denticulate	edge modified	utilized	Total
Identified Types					
02-C White	0	0	1	1	2
06-HL Tan	1	0	0	0	1
08-FH Yellow	0	0	1	1	2
14-FH Gray	0	0	1	0	1
Subtotal	*1*	*0*	*3*	*2*	*6*
Unidentified Types					
Indet Lt Brown	0	0	1	1	2
Indet Misc.	0	1	0	0	1
Subtotal	*0*	*1*	*1*	*1*	*3*
Total	**1**	**1**	**4**	**3**	**9**

TabH-189. Debitage Recovery by Size and Material Type, AU2, 41CV125.

	Size (cm)					
Lithic Material	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Unidentified Types						
Indet Dk Brown	1	0	0	0	0	1
Indet Dk Gray	1	0	1	0	0	2
Indet Lt Brown	0	3	11	1	1	16
Indet Lt Gray	1	3	0	0	0	4
Indet Misc.	0	0	1	0	0	1
Indet Mottled	0	4	2	1	0	7
Indet White	0	0	1	0	1	2
Total	**3**	**10**	**16**	**2**	**2**	**33**

Table H-190. Debitage Cortex Characteristics by Material Type, AU2, 41CV125.

Lithic Material	Partial Cortex	No Cortex	Total
Unidentified Types			
Indet Dk Brown	0	1	1
Indet Dk Gray	0	2	2
Indet Lt Brown	3	13	16
Indet Lt Gray	0	4	4
Indet Misc.	0	1	1
Indet Mottled	2	5	7
Indet White	1	1	2
Total	**6**	**27**	**33**

Table H-191. Debitage Recovery by Size and Material Type, AU1, 41CV184.

Lithic Material	Size (cm) 0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Identified Types						
07-Foss Pale Brown	0	0	0	0	1	1
08-FH Yellow	0	5	9	11	3	28
09-HL Tr Brown	0	0	0	0	1	1
14-FH Gray	5	0	4	0	1	10
15-Gry/Brn/Grn	0	0	6	5	2	13
17-Owl Crk Black	0	0	0	1	0	1
Subtotal	*5*	*5*	*19*	*17*	*8*	*54*
Unidentified Types						
Indet Black	1	0	0	0	0	1
Indet Dk Brown	0	1	0	0	0	1
Indet Lt Brown	0	3	1	4	1	9
Indet Lt Gray	2	0	0	0	0	2
Indet Misc.	0	2	9	1	0	12
Indet Mottled	0	0	1	2	0	3
Indet White	0	0	0	1	0	1
Subtotal	*3*	*6*	*11*	*8*	*1*	*29*
Total	**8**	**11**	**30**	**25**	**9**	**83**

Table H-192. Binomial Statistic Results, AU1, 41CV184.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
07-Foss Pale Brown	1	less	less
08-FH Yellow	28	more	more
09-HL Tr Brown	1	less	less
14-FH Gray	10	expected	expected
15-Gry/Brn/Grn	13	expected	expected
17-Owl Crk Black	1	less	less
Total Indet	29	more	na

1. Expected minimum = 6; expected maximum = 18.
2. Expected minimum = 4; expected maximum = 15.

Table H-193. Debitage Cortex Characteristics by Material Type, AU1, 41CV184.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
07-Foss Pale Brown	1	0	1
08-FH Yellow	9	19	28
09-HL Tr Brown	0	1	1
14-FH Gray	5	5	10
15-Gry/Brn/Grn	4	9	13
17-Owl Crk Black	0	1	1
Subtotal	*19*	*35*	*54*
Unidentified Types			
Indet Black	0	1	1
Indet Dk Brown	0	1	1
Indet Lt Brown	6	3	9
Indet Lt Gray	0	2	2
Indet Misc.	4	8	12
Indet Mottled	3	0	3
Indet White	0	1	1
Subtotal	*13*	*16*	*29*
Total	**32**	**51**	**83**

Table H-194. Lithic Tools, AU1, 41CV194.

Lithic Material	Tool Type: end scraper	finished biface	side scraper	utilized	Total
08-FH Yellow	0	0	0	1	1
13-ER Flecked	1	0	0	0	1
14-FH Gray	0	0	1	0	1
Indet Lt Brown	0	1	0	0	1
Total	**1**	**1**	**1**	**1**	**4**

Table H-195. Faunal Recovery, AU1, 41CV194.

Bivalves	Symmetry: left	right	Total
Lampsilis sp.	0	1	1
Quadrula sp.	1	0	1
Total	**1**	**1**	**2**

Table H-196. Debitage Recovery by Size and Material Type, AU2, 41CV184.

Lithic Material	Size (cm): 0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Identified Types							
06-HL Tan	0	3	16	3	3	2	27
08-FH Yellow	3	49	57	56	16	0	181
14-FH Gray	1	15	9	7	1	0	33
15-Gry/Brn/Grn	0	15	17	14	4	0	50
17-Owl Crk Black	0	7	6	0	0	0	13
18-C Mottled	0	0	1	0	0	0	1
22-C Mott/Flecks	0	0	0	0	3	1	4
28-Table Rock Flat	0	0	0	0	1	0	1
Subtotal	*4*	*89*	*106*	*80*	*28*	*3*	*310*
Unidentified Types							
Indet Dk Brown	1	3	0	0	1	0	5
Indet Dk Gray	13	25	0	0	0	0	38
Indet Lt Brown	11	19	9	3	1	0	43
Indet Lt Gray	3	3	10	2	0	0	18
Indet Misc.	7	27	29	9	3	0	75
Indet Mottled	0	6	14	3	1	0	24
Indet White	0	1	5	0	1	0	7
Subtotal	*35*	*84*	*67*	*17*	*7*	*0*	*210*
Total	39	173	173	97	35	3	520

Table H-197. Binomial Statistic Results, AU2, 41CV184.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
06-HL Tan	27	less	expected
08-FH Yellow	181	more	more
14-FH Gray	33	less	expected
15-Gry/Brn/Grn	50	expected	expected
17-Owl Crk Black	13	less	less
18-C Mottled	1	less	less
22-C Mott/Flecks	4	less	less
28-Table Rock Flat	1	less	less
Total Indet	210	more	na

1. Expected minimum = 43; expected maximum = 71.
2. Expected minimum = 27; expected maximum = 50.

Table H-198. Debitage Cortex Characteristics by Material Type, AU2, 41CV184.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
06-HL Tan	6	21	27
08-FH Yellow	32	149	181
14-FH Gray	13	20	33
15-Gry/Brn/Grn	13	37	50
17-Owl Crk Black	4	9	13
18-C Mottled	0	1	1
22-C Mott/Flecks	3	1	4
28-Table Rock Flat	1	0	1
Subtotal	*72*	*238*	*310*
Unidentified Types			
Indet Dk Brown	2	3	5
Indet Dk Gray	1	37	38
Indet Lt Brown	6	37	43
Indet Lt Gray	3	15	18
Indet Misc.	6	69	75
Indet Mottled	23	1	24
Indet White	0	7	7
Subtotal	*41*	*169*	*210*
Total	**113**	**407**	**520**

Table H-199. Lithic Tools, AU2, 41CV184.

	Core Type	Tool Type						
Lithic Material	multiple platform	Chopper Type B	edge modified	finished biface	graver	late stage biface	utilized	Total
06-HL Tan	1	1	0	0	1	0	0	3
08-FH Yellow	0	0	0	1	0	0	1	2
14-FH Gray	1	0	1	0	1	0	0	3
Indet Misc.	0	0	0	0	0	1	0	1
Total	2	1	1	1	2	1	1	9

Table H-200. Faunal Recovery, AU2, 41CV184.

	Element										
Taxon	Calcaneus	indeterminate	Long bone, midsect.	Metatarsal	Rib	Tooth	Vertebra	left	right	unknown	Total
Vertebrates											
Artiodactyla	0	0	0	1	0	0	0	-	-	-	1
Mammal (med/lg)	0	5	6	0	0	0	0	-	-	-	11
Mammal (lg/vlg)	0	0	20	0	1	0	1	-	-	-	22
Mammal (unk. size)	0	1	0	0	0	0	0	-	-	-	1
Odocoileus sp.	1	0	0	0	0	2	0	-	-	-	3
Total	1	6	26	1	1	2	1	-	-	-	38
Bivalves											
Amblema plicata	-	-	-	-	-	-	-	4	3	0	7
Amblema sp.	-	-	-	-	-	-	-	4	2	0	6
Cyrtonaias sp.	-	-	-	-	-	-	-	0	2	0	2
Quadrula apiculata	-	-	-	-	-	-	-	2	0	0	2
Quadrula sp.	-	-	-	-	-	-	-	3	0	0	3
Tritigonia verrucosa	-	-	-	-	-	-	-	2	1	0	3
Unionacea	-	-	-	-	-	-	-	14	11	1	26
Total	-	-	-	-	-	-	-	29	19	1	49

Table H-201. Faunal Recovery, AU3, 41CV184.

	Element						
Taxon	Indeterminate	Long bone, unident.	Metapodial	Phalange	left	right	Total
Vertebrates							
Mammal (medium)	0	1	0	0	-	-	1
Mammal (lg/vlg)	2	1	1	0	-	-	4
Odocoileus sp.	0	0	0	1	-	-	1
Total	2	2	1	1	-	-	6
Bivalves							
Amblema plicata	-	-	-	-	1	2	3
Unionacea	-	-	-	-	1	1	2
Total	-	-	-	-	2	3	5

Table H-202. Debitage Recovery by Size and Material Type, AU3, 41CV184.

	Size (cm)				
Lithic Material	0.9-1.2	1.2-1.8	1.8-2.6	2.6-5.2	Total
Identified Types					
06-HL Tan	0	0	2	2	4
08-FH Yellow	6	7	9	1	23
14-FH Gray	0	0	1	1	2
15-Gry/Brn/Grn	3	1	4	2	10
17-Owl Crk Black	0	2	0	0	2
Subtotal	*9*	*10*	*16*	*6*	*41*
Unidentified Types					
Indet Black	1	0	0	0	1
Indet Dk Brown	0	0	1	0	1
Indet Dk Gray	0	4	0	0	4
Indet Lt Brown	2	12	1	0	15
Indet Lt Gray	0	2	0	0	2
Indet Misc.	0	4	7	0	11
Indet Mottled	0	1	4	0	5
Indet White	0	3	0	0	3
Subtotal	*3*	*26*	*13*	*0*	*42*
Total	12	36	29	6	83

Table H-203. Binomial Statistic Results, AU3, 41CV184.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
06-HL Tan	4	less	expected
08-FH Yellow	23	more	more
14-FH Gray	2	less	less
15-Gry/Brn/Grn	10	expected	expected
17-Owl Crk Black	2	less	less
Total Indet	42	more	na

1. Expected minimum = 7; expected maximum = 21.

2. Expected minimum = 4; expected maximum = 13.

Table H-204. Debitage Cortex Characteristics by Material Type, AU3, 41CV184.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
06-HL Tan	3	1	4
08-FH Yellow	5	18	23
14-FH Gray	1	1	2
15-Gry/Brn/Grn	3	7	10
17-Owl Crk Black	1	1	2
Subtotal	*13*	*28*	*41*
Unidentified Types			
Indet Black	0	1	1
Indet Dk Brown	1	0	1
Indet Dk Gray	4	0	4
Indet Lt Brown	0	15	15
Indet Lt Gray	1	1	2
Indet Misc.	4	7	11
Indet Mottled	5	0	5
Indet White	0	3	3
Subtotal	*15*	*27*	*42*
Total	**28**	**55**	**83**

Table H-205. Faunal Recovery, AU4, 41CV184.

Taxon	Element: Long bone, unident.	right	Total
Vertebrates			
Mammal (med/lg)	1	-	1
Mammal (lg/vlg)	2	-	2
Total	**3**	**-**	**3**
Bivalves			
Unionacea	-	1	1

Table H-206. Debitage Recovery by Size and Material Type, AU4, 41CV184.

Lithic Material	Size (cm): 0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Identified Types							
08-FH Yellow	0	1	2	1	1	0	5
14-FH Gray	0	1	0	0	0	0	1
15-Gry/Brn/Grn	0	0	2	0	0	0	2
22-C Mott/Flecks	0	0	0	0	0	1	1
Subtotal	*0*	*2*	*4*	*1*	*1*	*1*	*9*
Unidentified Types							
Indet Dk Gray	0	0	1	0	0	0	1
Indet Lt Brown	0	2	0	2	0	0	4
Indet Lt Gray	0	0	0	1	0	0	1
Indet Misc.	2	0	1	1	0	0	4
Indet Mottled	0	0	1	1	0	0	2
Subtotal	*2*	*2*	*3*	*5*	*0*	*0*	*12*
Total	**2**	**4**	**7**	**6**	**1**	**1**	**21**

Table H-207. Binomial Statistic Results, AU4, 41CV184.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
08-FH Yellow	5	expected	expected
14-FH Gray	1	expected	expected
15-Gry/Brn/Grn	2	expected	expected
22-C Mott/Flecks	1	expected	expected
Total Indet	12	more	less

1. Expected minimum = 1; expected maximum = 8.
2. Expected minimum = 0; expected maximum = 5.

Table H-208. Debitage Cortex Characteristics by Material Type, AU4, 41CV184.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
08-FH Yellow	2	3	5
14-FH Gray	0	1	1
15-Gry/Brn/Grn	0	2	2
22-C Mott/Flecks	1	0	1
Subtotal	*3*	*6*	*9*
Unidentified Types			
Indet Dk Gray	1	0	1
Indet Lt Brown	1	3	4
Indet Lt Gray	0	1	1
Indet Misc.	0	4	4
Indet Mottled	2	0	2
Subtotal	*4*	*8*	*12*
Total	7	14	21

Table H-209. Debitage Recovery by Size and Material Type, AU1, 41CV240.

Lithic Material	Size (cm) 0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Identified Types					
08-FH Yellow	1	1	3	2	7
18-C Mottled	0	0	0	1	1
Subtotal	*1*	*1*	*3*	*3*	*8*
Unidentified Types					
Indet Dk Brown	1	1	1	0	3
Indet Dk Gray	0	2	0	0	2
Indet Lt Brown	14	8	11	4	37
Indet Lt Gray	1	5	0	0	6
Indet Mottled	1	4	2	2	9
Indet White	2	6	0	0	8
Subtotal	*19*	*26*	*14*	*6*	*65*
Total	20	27	17	9	73

Table H-210. Binomial Statistic Results, AU1, 41CV240.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
08-FH Yellow	7	less	expected
18-C Mottled	1	less	expected
Total Indet	65	more	na

1. Expected minimum = 16; expected maximum = 32.
2. Expected minimum = 1; expected maximum = 7.

Table H-211. Debitage Cortex Characteristics by Material Type, AU1, 41CV240.

Lithic Material	Partial Cortex	No Cortex	Indeterminate	Total
Identified Types				
08-FH Yellow	2	5	0	7
18-C Mottled	1	0	0	1
Subtotal	*3*	*5*	*0*	*8*
Unidentified Types				
Indet Dk Brown	2	1	0	3
Indet Dk Gray	0	2	0	2
Indet Lt Brown	10	27	0	37
Indet Lt Gray	2	4	0	6
Indet Mottled	3	5	1	9
Indet White	0	8	0	8
Subtotal	*17*	*47*	*1*	*65*
Total	20	52	1	73

Table H-212. Debitage Recovery by Size and Material Type, AU1, 41CV271.

	Size (cm)					
Lithic Material	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Identified Types						
06-HL Tan	0	2	0	0	0	2
08-FH Yellow	0	2	1	2	1	6
14-FH Gray	0	1	0	2	0	3
15-Gry/Brn/Grn	1	3	3	5	0	12
Subtotal	*1*	*8*	*4*	*9*	*1*	*23*
Unidentified Types						
Indet Lt Brown	1	3	1	1	0	6
Indet Lt Gray	0	2	0	0	0	2
Indet Misc.	0	0	0	1	0	1
Indet Mottled	0	0	2	3	1	6
Indet White	0	0	0	1	0	1
Subtotal	*1*	*5*	*3*	*6*	*1*	*16*
Total	**2**	**13**	**7**	**15**	**2**	**39**

Table H-213. Debitage Cortex Characteristics by Material Type, AU1, 41CV271.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
06-HL Tan	0	2	2
08-FH Yellow	4	2	6
14-FH Gray	2	1	3
15-Gry/Brn/Grn	8	4	12
Subtotal	*14*	*9*	*23*
Unidentified Types			
Indet Lt Brown	3	3	6
Indet Lt Gray	0	2	2
Indet Misc.	1	0	1
Indet Mottled	5	1	6
Indet White	1	0	1
Subtotal	*10*	*6*	*16*
Total	**24**	**15**	**39**

Table H-214. Debitage Recovery by Size and Material Type, AU1, 41CV317.

	Size (cm)						
Lithic Material	< 0.5	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Identified Types							
HL BLue (1 & 10)	0	1	0	4	6	1	12
02-C White	0	0	1	3	2	0	6
03-AM Gray	0	0	0	1	0	0	1
06-HL Tan	0	45	56	19	18	4	142
08-FH Yellow	0	3	13	26	7	4	53
09-HL Tr Brown	0	7	4	3	3	2	19
14-FH Gray	0	0	3	21	8	2	34
15-Gry/Brn/Grn	0	59	54	47	21	9	190
17-Owl Crk Black	12	32	9	27	0	1	81
18-C Mottled	0	0	0	4	9	6	19
19-C Dr Gray	0	0	2	4	8	4	18
20-C Shell Hash	0	0	0	0	1	0	1
21-C Lgt Gray	0	0	0	1	1	0	2
22-C Mott/Flecks	0	0	2	2	2	8	14
23-C Mott/Banded	0	0	0	3	5	9	17
24-C Br Fossil	0	0	0	2	0	0	2
25-C Br Fleck	0	0	0	1	0	0	1
26-C Striated	0	0	0	0	0	1	1
27-C Novaculite	0	0	0	1	1	0	2
28-Table Rock Flat	0	0	0	1	0	0	1
Subtotal	*12*	*147*	*144*	*170*	*92*	*51*	*616*
Unidentified Types							
Indet Black	12	0	3	5	3	1	24
Indet Dk Brown	4	12	14	24	4	3	61
Indet Dk Gray	24	100	57	29	17	1	228
Indet Lt Brown	89	216	84	81	26	6	502
Indet Lt Gray	13	34	24	21	8	0	100
Indet Misc.	22	73	60	38	6	6	205
Indet Mottled	1	17	7	12	17	8	62
Indet Trans	0	2	7	1	4	1	15
Indet White	2	6	11	5	1	2	27
Subtotal	*167*	*460*	*267*	*216*	*86*	*28*	*1224*
Total	**179**	**607**	**411**	**386**	**178**	**79**	**1840**

Table H-215. Binomial Statistic Results, AU1, 41CV317.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
HL Blue (1 & 10)	12	less	less
02-C White	6	less	less
03-AM Gray	1	less	less
06-HL Tan	142	more	more
08-FH Yellow	53	less	more
09-HL Tr Brown	19	less	less
14-FH Gray	34	less	expected
15-Gry/Brn/Grn	190	more	more
17-Owl Crk Black	81	expected	more
18-C Mottled	19	less	less
19-C Dr Gray	18	less	less
20-C Shell Hash	1	less	less
21-C Lgt Gray	2	less	less
22-C Mott/Flecks	14	less	less
23-C Mott/Banded	17	less	less
24-C Br Fossil	2	less	less
25-C Br Fleck	1	less	less
26-C Striated	1	less	less
27-C Novaculite	2	less	less
28-Table Rock Flat	1	less	less
Total Indet	1224	more	na

1. Expected minimum = 70; expected maximum = 106.

2. Expected minimum = 20; expected maximum = 41.

Table H-216. Debitage Cortex Characteristics by Material Type, AU1, 41CV317.

Lithic Material	Partial Cortex	Indeterminate	No Cortex	Total
Identified Types				
HL Blue (1 & 10)	5	0	7	12
02-C White	1	0	5	6
03-AM Gray	0	0	1	1
06-HL Tan	10	0	132	142
08-FH Yellow	18	0	35	53
09-HL Tr Brown	9	0	10	19
14-FH Gray	5	2	27	34
15-Gry/Brn/Grn	32	0	158	190
17-Owl Crk Black	7	0	74	81
18-C Mottled	10	1	8	19
19-C Dr Gray	11	0	7	18
20-C Shell Hash	0	0	1	1
21-C Lgt Gray	1	1	0	2
22-C Mott/Flecks	10	0	4	14
23-C Mott/Banded	16	0	1	17
24-C Br Fossil	0	0	2	2
25-C Br Fleck	1	0	0	1
26-C Striated	1	0	0	1
27-C Novaculite	1	0	1	2
28-Table Rock Flat	1	0	0	1
Subtotal	*139*	*4*	*473*	*616*
Unidentified Types				
Indet Black	6	0	18	24
Indet Dk Brown	12	0	49	61
Indet Dk Gray	39	0	189	228
Indet Lt Brown	90	5	407	502
Indet Lt Gray	10	0	90	100
Indet Misc.	80	1	124	205
Indet Mottled	38	0	24	62
Indet Trans	10	0	5	15
Indet White	5	0	22	27
Subtotal	*290*	*6*	*928*	*1224*
Total	**429**	**10**	**1401**	**1840**

Table H-217. Projectile Points, AU1, 41CV317.

	Point Type						
Lithic Material	Castroville	Fresno	Indeterminate	Other Arrow	Other Dart	Scallorn	Total
06-HL Tan	1	0	0	3	0	0	4
Indet Lt Brown	0	0	0	1	0	1	2
Indet Misc.	0	0	0	0	2	0	2
Indet Mottled	0	0	1	0	0	0	1
Indet White	0	1	0	0	0	0	1
Total	**1**	**1**	**1**	**4**	**2**	**1**	**10**

Table H-218. Lithic Tools, AU1, 41CV317.

	Core Type	Tool Type									
Lithic Material	multiple platform	Chopper Type B	Crushing/Abrading	early stage biface	edge modified	end scraper	finished biface	late stage biface	side scraper	utilized	Total
02-C White	0	0	0	0	0	0	0	0	0	1	1
06-HL Tan	1	0	0	0	3	0	0	2	0	0	6
08-FH Yellow	0	0	0	0	0	0	1	0	0	0	1
14-FH Gray	0	0	0	0	0	0	0	2	0	1	3
15-Gry/Brn/Grn	1	0	0	0	0	0	0	0	0	1	2
17-Owl Crk Black	1	0	0	0	0	0	1	2	0	0	4
19-C Dr Gray	1	0	1	0	0	0	0	1	0	1	4
22-C Mott/Flecks	0	1	0	1	0	0	0	1	0	0	3
Indet Dk Brown	0	0	0	0	0	2	0	0	1	0	3
Indet Lt Brown	0	0	0	0	0	1	1	1	0	0	3
Indet Lt Gray	0	0	0	0	0	0	0	0	0	1	1
Indet Misc.	0	0	0	0	2	0	0	0	0	1	3
Indet Mottled	0	0	0	0	2	0	0	1	0	2	5
Total	**4**	**1**	**1**	**1**	**7**	**3**	**3**	**10**	**1**	**8**	**39**

Table H-219. Faunal Recovery, AU1, 41CV317.

Taxon	Element: Antler	Astragalus	Atlas	Carapace	Carpal	Carpal/Tarsal	Cranium	Cuneiform	Femur	Fourth carpal	Indeterminate	Long bone, unident.	Metacarpal	Metatarsal	Phalange	Plastron	Radius	Rib	Tibia	Tooth	Vertebra	left	right	unknown	Total
Vertebrates																									
Artiodactyla	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	-	-	-	7
Artiodactyls (med)	0	0	0	0	0	1	3	0	0	0	0	0	0	2	5	0	1	0	1	1	1	-	-	-	15
Aves (small)	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	-	-	-	1
Aves (medium)	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	-	-	-	1
Carnivora	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	-	-	-	1
Mammal (small)	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	-	-	-	2
Mammal (sm/med)	0	0	0	0	0	0	0	0	0	0	5	15	0	0	0	0	0	0	0	0	0	-	-	-	20
Mammal (med/lg)	0	0	0	0	0	0	4	0	0	0	18	6	0	0	0	0	0	2	0	1	0	-	-	-	31
Mammal (lg/vlg)	1	0	0	0	0	0	0	0	0	0	28	143	0	0	0	0	0	15	0	0	6	-	-	-	193
Mammal (unk. size)	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	-	-	-	9
Odocoileus sp.	0	1	1	0	1	0	0	1	1	1	0	0	1	1	4	0	0	0	0	3	0	-	-	-	15
Serpentes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	-	-	-	1
Testudinata	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	-	-	-	19
Vertebrate-undiffer.	0	0	0	0	0	0	0	0	0	0	104	3	0	0	0	0	0	0	0	0	0	-	-	-	107
Total	**1**	**1**	**1**	**15**	**1**	**1**	**7**	**1**	**1**	**1**	**165**	**170**	**1**	**3**	**9**	**4**	**1**	**17**	**1**	**13**	**8**	**-**	**-**	**-**	**422**
Bivalves																									
Amblema plicata	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	6	0	9
Amblema sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	0	1
Lampsilis sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	51	54	0	105
Lampsilis teres	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	0	1
Lampsilis hydiana	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	10	0	17
Tritigonia verrucosa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	1	0	4
Unionacea	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	9	7	31
Total	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**81**	**80**	**7**	**168**

Table H-220. Debitage Recovery by Size and Material Type, AU2, 41CV317.

Lithic Material	Size (cm) <0.5	0.5-0.9	0.9-1.2	1.2-1.8	1.8-2.6	2.6-5.2	Total
Identified Types							
02-C White	0	0	0	0	1	0	1
04-7 Mile Novac	0	0	0	0	1	0	1
07-Foss Pale Brown	0	0	0	0	1	1	2
08-FH Yellow	0	2	6	1	2	0	11
09-HL Tr Brown	0	0	0	0	1	0	1
10-HL Blue	0	0	0	0	1	0	1
14-FH Gray	0	0	0	0	1	2	3
15-Gry/Brn/Grn	0	0	0	1	2	1	4
17-Owl Crk Black	0	0	0	1	1	0	2
19-C Dr Gray	0	0	0	0	0	1	1
22-C Mott/Flecks	0	0	0	0	1	0	1
Subtotal	*0*	*2*	*6*	*3*	*12*	*5*	*28*
Unidentified Types							
Indet Black	0	0	1	0	0	0	1
Indet Dk Brown	0	0	2	1	0	0	3
Indet Dk Gray	0	1	0	0	2	0	3
Indet Lt Brown	3	6	4	1	1	0	15
Indet Lt Gray	0	1	0	2	0	0	3
Indet Misc.	0	0	1	0	1	0	2
Indet Mottled	0	0	0	1	0	1	2
Indet Trans	0	0	0	0	1	0	1
Indet White	1	3	1	0	1	0	6
Subtotal	*4*	*11*	*9*	*5*	*6*	*1*	*36*
Total	**4**	**13**	**15**	**8**	**18**	**6**	**64**

Table H-221. Binomial Statistic Results, AU2, 41CV317.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
02-C White	1	expected	expected
04-7 Mile Novac	1	expected	expected
07-Foss Pale Brown	2	expected	expected
08-FH Yellow	11	more	more
09-HL Tr Brown	1	expected	expected
10-HL Blue	1	expected	expected
14-FH Gray	3	expected	expected
15-Gry/Brn/Grn	4	expected	expected
17-Owl Crk Black	2	expected	expected
19-C Dr Gray	1	expected	expected
22-C Mott/Flecks	1	expected	expected
Total Indet	36	more	na

1. Expected minimum = 1; expected maximum = 10.
2. Expected minimum = 0; expected maximum = 6.

Table H-222. Debitage Cortex Characteristics by Material Type, AU2, 41CV317.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
02-C White	0	1	1
04-7 Mile Novac	1	0	1
07-Foss Pale Brown	2	0	2
08-FH Yellow	0	11	11
09-HL Tr Brown	1	0	1
10-HL Blue	1	0	1
14-FH Gray	2	1	3
15-Gry/Brn/Grn	3	1	4
17-Owl Crk Black	1	1	2
19-C Dr Gray	1	0	1
22-C Mott/Flecks	1	0	1
Subtotal	*13*	*15*	*28*
Unidentified Types			
Indet Black	0	1	1
Indet Dk Brown	1	2	3
Indet Dk Gray	3	0	3
Indet Lt Brown	5	10	15
Indet Lt Gray	2	1	3
Indet Misc.	1	1	2
Indet Mottled	2	0	2
Indet Trans	1	0	1
Indet White	1	5	6
Subtotal	*16*	*20*	*36*
Total	**29**	**35**	**64**

Table H-223. Faunal Recovery, AU2, 41CV317.

Taxon	Cervical vertebra	Cranium	Indeterminate	Long bone, unident.	Rib	Thoracic vertebra	Vertebra	left	right	unknown	Total
	Element										
Vertebrates											
Bos/Bison	0	0	0	0	0	1	0	-	-	-	1
Bos	1	0	0	0	88	5	13	-	-	-	107
Mammal (small)	0	0	0	1	0	0	0	-	-	-	1
Mammal (med/lg)	0	0	2	0	0	0	0	-	-	-	2
Mammal (lg/vlg)	0	1	0	3	0	0	0	-	-	-	4
Total	**1**	**1**	**2**	**4**	**88**	**6**	**13**	**-**	**-**	**-**	**115**
Bivalves											
Amblema plicata	-	-	-	-	-	-	-	1	2	0	3
Amblema sp.	-	-	-	-	-	-	-	1	0	0	1
Indeterminate/unknown	-	-	-	-	-	-	-	0	0	1	1
Lampsilis sp.	-	-	-	-	-	-	-	2	7	0	9
Unionacea	-	-	-	-	-	-	-	2	2	6	10
Total	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**6**	**11**	**7**	**24**

Table H-224. Debitage Recovery by Size and Material Type, AU1, 41CV332.

Lithic Material	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	Total
	Size (cm)				
Identified Types					
08-FH Yellow	0	1	2	0	3
Unidentified Types					
Indet Dk Brown	2	0	0	0	2
Indet Dk Gray	1	0	1	0	2
Indet Lt Brown	6	13	13	2	34
Indet Lt Gray	1	1	1	0	3
Indet Mottled	2	2	3	1	8
Indet White	0	5	0	0	5
Subtotal	*12*	*21*	*18*	*3*	*54*
Total	**12**	**22**	**20**	**3**	**57**

Table H-225. Binomial Statistic Results, AU1, 41CV332.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
08-FH Yellow	3	less	expected
Total Indet	54	more	na

1. Expected minimum = 21; expected maximum = 36.

2. Expected minimum = 3; expected maximum = 3.

Table H-226 Debitage Cortex Characteristics by Material Type, AU1, 41CV332.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
08-FH Yellow	0	3	3
Unidentified Types			
Indet Dk Brown	0	2	2
Indet Dk Gray	0	2	2
Indet Lt Brown	9	25	34
Indet Lt Gray	1	2	3
Indet Mottled	5	3	8
Indet White	0	5	5
Subtotal	*15*	*39*	*54*
Total	**15**	**42**	**57**

Table H-227. Debitage Recovery by Size and Material Type, AU1, 41CV378.

	Size (cm)					
Lithic Material	0.5-0.9	0.9-1.2	1.2-1.8	1.8-2.6	2.6-5.2	Total
Identified Types						
03-AM Gray	0	1	0	0	0	1
06-HL Tan	0	0	6	1	0	7
08-FH Yellow	1	0	0	2	2	5
13-ER Flecked	0	0	0	1	0	1
14-FH Gray	0	5	0	1	0	6
15-Gry/Brn/Grn	1	0	1	3	0	5
17-Owl Crk Black	2	1	3	0	0	6
Subtotal	*4*	*7*	*10*	*8*	*2*	*31*
Unidentified Types						
Indet Dk Brown	0	1	2	0	1	4
Indet Dk Gray	4	2	1	0	0	7
Indet Lt Brown	15	3	10	2	0	30
Indet Lt Gray	2	4	1	0	1	8
Indet Misc.	3	2	1	1	0	7
Indet Mottled	4	5	1	2	0	12
Indet White	1	4	0	1	1	7
Subtotal	*29*	*21*	*16*	*6*	*3*	*75*
Total	**33**	**28**	**26**	**14**	**5**	**106**

Table H-228. Binomial Statistic Results, AU1, 41CV378.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
03-AM Gray	1	less	expected
06-HL Tan	7	expected	expected
08-FH Yellow	5	less	expected
13-ER Flecked	1	less	expected
14-FH Gray	6	less	expected
15-Gry/Brn/Grn	5	less	expected
17-Owl Crk Black	6	less	expected
Total Indet	75	more	na

1. Expected minimum = 7; expected maximum = 20.

2. Expected minimum = 1; expected maximum = 9.

Table H-229. Debitage Cortex Characteristics by Material Type, AU1, 41CV378.

Lithic Material	Partial Cortex	Indeterminate	No Cortex	Total
Identified Types				
03-AM Gray	1	0	0	1
06-HL Tan	0	0	7	7
08-FH Yellow	2	0	3	5
13-ER Flecked	1	0	0	1
14-FH Gray	1	0	5	6
15-Gry/Brn/Grn	3	0	2	5
17-Owl Crk Black	1	0	5	6
Subtotal	*9*	*0*	*22*	*31*
Unidentified Types				
Indet Dk Brown	1	0	3	4
Indet Dk Gray	1	0	6	7
Indet Lt Brown	6	0	24	30
Indet Lt Gray	2	0	6	8
Indet Misc.	1	1	5	7
Indet Mottled	7	0	5	12
Indet White	0	0	7	7
Subtotal	*18*	*1*	*56*	*75*
Total	**27**	**1**	**78**	**106**

Table H-230. Lithic Tools, AU1, 41CV378.

Lithic Material	Tool Type			Total
	finished biface	spokeshave	utilized	
06-HL Tan	1	0	0	1
08-FH Yellow	0	1	0	1
15-Gry/Brn/Grn	0	0	1	1
Indet Mottled	0	0	2	2
Total	**1**	**1**	**3**	**5**

Table H-231. Debitage Recovery by Size and Material Type, AU1, 41CV379.

Lithic Material	Size (cm)					Total
	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	
Identified Types						
06-HL Tan	0	3	0	1	0	4
07-Foss Pale Brown	0	0	0	0	1	1
08-FH Yellow	0	0	0	2	0	2
14-FH Gray	0	0	1	2	0	3
15-Gry/Brn/Grn	0	4	13	6	1	24
17-Owl Crk Black	1	3	1	2	0	7
Subtotal	*1*	*10*	*15*	*13*	*2*	*41*
Unidentified Types						
Indet Black	0	0	2	0	0	2
Indet Dk Brown	0	0	5	4	0	9
Indet Dk Gray	1	5	2	0	0	8
Indet Lt Brown	9	6	8	2	1	26
Indet Lt Gray	6	0	1	0	0	7
Indet Misc.	3	7	2	1	0	13
Indet Mottled	2	2	6	5	0	15
Indet Trans	0	2	0	2	0	4
Indet White	0	0	2	1	0	3
Subtotal	*21*	*22*	*28*	*15*	*1*	*87*
Total	**22**	**32**	**43**	**28**	**3**	**128**

Table H-232. Binomial Statistic Results, AU1, 41CV379.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
06-HL Tan	4	less	expected
07-Foss Pale Brown	1	less	less
08-FH Yellow	2	less	less
14-FH Gray	3	less	expected
15-Gry/Brn/Grn	24	expected	more
17-Owl Crk Black	7	less	expected
Total Indet	87	more	na

1. Expected minimum = 11; expected maximum = 26.

2. Expected minimum = 3; expected maximum = 12.

Table H-233. Debitage Cortex Characteristics by Material Type, AU1, 41CV379.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
06-HL Tan	1	3	4
07-Foss Pale Brown	1	0	1
08-FH Yellow	2	0	2
14-FH Gray	1	2	3
15-Gry/Brn/Grn	9	15	24
17-Owl Crk Black	0	7	7
Subtotal	*14*	*27*	*41*
Unidentified Types			
Indet Black	0	2	2
Indet Dk Brown	2	7	9
Indet Dk Gray	3	5	8
Indet Lt Brown	7	19	26
Indet Lt Gray	0	7	7
Indet Misc.	2	11	13
Indet Mottled	2	13	15
Indet Trans	0	4	4
Indet White	0	3	3
Subtotal	*16*	*71*	*87*
Total	**30**	**98**	**128**

Table H-234. Debitage Recovery by Size and Material Type, AU2, 41CV379.

	Size (cm)							
Lithic Material	<0.5	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Identified Types								
02-C White	0	0	0	0	1	0	0	1
03-AM Gray	0	0	0	0	1	0	0	1
06-HL Tan	0	0	1	2	7	4	1	15
08-FH Yellow	0	9	3	8	15	2	1	38
09-HL Tr Brown	0	0	0	4	0	0	0	4
10-HL Blue	0	0	0	1	0	0	0	1
14-FH Gray	0	0	0	2	0	1	0	3
15-Gry/Brn/Grn	0	2	48	67	23	17	0	157
17-Owl Crk Black	0	0	0	1	1	2	0	4
18-C Mottled	0	0	0	0	6	1	0	7
22-C Mott/Flecks	0	0	0	0	1	0	0	1
Subtotal	*0*	*11*	*52*	*85*	*55*	*27*	*2*	*232*
Unidentified Types								
Indet Black	0	6	9	3	3	0	0	21
Indet Dk Brown	0	0	50	6	4	3	0	63
Indet Dk Gray	16	13	15	25	4	0	0	73
Indet Lt Brown	0	14	11	18	5	5	0	53
Indet Lt Gray	0	22	17	14	4	0	1	58
Indet Misc.	0	20	70	57	22	5	0	174
Indet Mottled	0	0	8	14	8	12	0	42
Indet Trans	0	0	4	4	1	1	0	10
Indet White	0	0	6	3	1	0	0	10
Subtotal	*16*	*75*	*190*	*144*	*52*	*26*	*1*	*504*
Total	**16**	**86**	**242**	**229**	**107**	**53**	**3**	**736**

Table H-235. Binomial Statistic Results, AU2, 41CV379.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
02-C White	1	less	less
03-AM Gray	1	less	less
06-HL Tan	15	less	expected
08-FH Yellow	38	less	more
09-HL Tr Brown	4	less	less
10-HL Blue	1	less	less
14-FH Gray	3	less	less
15-Gry/Brn/Grn	157	more	more
17-Owl Crk Black	4	less	less
18-C Mottled	7	less	less
22-C Mott/Flecks	1	less	less
Total Indet	504	more	na

1. Expected minimum = 46; expected maximum = 76.

2. Expected minimum = 12; expected maximum = 30.

Table H-236. Debitage Cortex Characteristics by Material Type, AU2, 41CV379.

Lithic Material	Partial Cortex	Indeterminate	No Cortex	Total
Identified Types				
02-C White	0	0	1	1
03-AM Gray	1	0	0	1
06-HL Tan	8	1	6	15
08-FH Yellow	13	0	25	38
09-HL Tr Brown	0	0	4	4
10-HL Blue	0	0	1	1
14-FH Gray	0	0	3	3
15-Gry/Brn/Grn	31	0	126	157
17-Owl Crk Black	1	0	3	4
18-C Mottled	3	0	4	7
22-C Mott/Flecks	1	0	0	1
Subtotal	*58*	*1*	*173*	*232*
Unidentified Types				
Indet Black	3	0	18	21
Indet Dk Brown	14	0	49	63
Indet Dk Gray	7	0	66	73
Indet Lt Brown	10	0	43	53
Indet Lt Gray	7	0	51	58
Indet Misc.	27	29	118	174
Indet Mottled	24	2	16	42
Indet Trans	2	1	7	10
Indet White	1	0	9	10
Subtotal	*95*	*32*	*377*	*504*
Total	**153**	**33**	**550**	**736**

Table H-237. Lithic Tools, AU2, 41CV379.

Lithic Material	Tool Type											Total
	Chopper Type A	Chopper Type B	Crushing/Abrading	early stage biface	edge modified	graver	Hammerstone	late stage biface	middle stage biface	spokeshave	utilized	
06-HL Tan	1	0	0	2	0	0	0	0	0	0	3	6
07-Foss Pale Brown	0	0	0	0	0	0	0	0	0	0	1	1
08-FH Yellow	0	0	0	0	0	0	0	0	1	1	3	5
15-Gry/Brn/Grn	0	0	1	1	1	0	0	1	0	0	3	7
18-C Mottled	0	1	0	0	0	0	0	0	0	0	0	1
22-C Mott/Flecks	1	0	0	0	0	0	0	0	0	0	0	1
Indet Dk Brown	0	0	0	0	0	0	0	0	1	0	0	1
Indet Dk Gray	1	0	0	0	0	0	0	0	0	0	0	1
Indet Lt Brown	0	0	0	0	0	0	0	0	0	1	3	4
Indet Lt Gray	0	0	0	0	0	0	0	0	0	0	1	1
Indet Misc.	0	0	0	0	0	0	0	0	1	0	1	2
Indet Mottled	1	0	0	0	0	1	0	1	0	0	2	5
Quartzite	0	0	0	0	0	0	1	0	0	0	0	1
Total	**4**	**1**	**1**	**3**	**1**	**1**	**1**	**2**	**3**	**2**	**17**	**36**

Table H-238. Debitage Recovery by Size and Material Type, AU3, 41CV379.

Lithic Material	Size (cm) < 0.5	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Identified Types								
06-HL Tan	0	0	0	10	6	0	1	17
07-Foss Pale Brown	0	0	0	0	0	1	0	1
08-FH Yellow	0	2	9	0	3	2	0	16
14-FH Gray	0	0	3	1	0	0	0	4
15-Gry/Brn/Grn	0	1	6	3	5	4	0	19
17-Owl Crk Black	0	0	0	3	1	0	0	4
22-C Mott/Flecks	0	0	0	1	0	1	0	2
Subtotal	*0*	*3*	*18*	*18*	*15*	*8*	*1*	*63*
Unidentified Types								
Indet Black	0	2	1	0	0	0	0	3
Indet Dk Brown	0	0	0	1	0	1	0	2
Indet Dk Gray	0	4	6	6	2	0	1	19
Indet Lt Brown	0	19	18	55	9	3	0	104
Indet Lt Gray	1	0	0	1	1	2	0	5
Indet Misc.	0	3	13	24	15	5	0	60
Indet Mottled	0	1	44	33	21	13	2	114
Indet White	0	0	7	5	4	0	0	16
Subtotal	*1*	*29*	*89*	*125*	*52*	*24*	*3*	*323*
Total	**1**	**32**	**107**	**143**	**67**	**32**	**4**	**386**

Table H-239. Binomial Statistic Results, AU3, 41CV379.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
06-HL Tan	17	less	more
07-Foss Pale Brown	1	less	less
08-FH Yellow	16	less	more
14-FH Gray	4	less	expected
15-Gry/Brn/Grn	19	less	more
17-Owl Crk Black	4	less	expected
22-C Mott/Flecks	2	less	less
Total Indet	323	more	na

1. Expected minimum = 35; expected maximum = 61.
2. Expected minimum = 4; expected maximum = 15.

Table H-240. Debitage Cortex Characteristics by Material Type, AU3, 41CV379.

Lithic Material	Partial Cortex	Indeterminate	No Cortex	Total
Identified Types				
06-HL Tan	2	0	15	17
07-Foss Pale Brown	1	0	0	1
08-FH Yellow	2	1	13	16
14-FH Gray	0	0	4	4
15-Gry/Brn/Grn	5	0	14	19
17-Owl Crk Black	0	1	3	4
22-C Mott/Flecks	1	0	1	2
Subtotal	*11*	*2*	*50*	*63*
Unidentified Types				
Indet Black	0	0	3	3
Indet Dk Brown	2	0	0	2
Indet Dk Gray	5	3	11	19
Indet Lt Brown	13	0	91	104
Indet Lt Gray	0	0	5	5
Indet Misc.	9	0	51	60
Indet Mottled	32	0	82	114
Indet White	1	0	15	16
Subtotal	*62*	*3*	*258*	*323*
Total	**73**	**5**	**308**	**386**

Table H-241. Lithic Tools, AU3, 41CV379.

	Tool Type						
Lithic Material	early stage biface	edge modified	finished biface	late stage biface	middle stage biface	utilized	Total
06-HL Tan	0	0	0	1	0	1	2
07-Foss Pale Brown	0	0	0	0	1	0	1
08-FH Yellow	0	0	0	1	0	0	1
15-Gry/Brn/Grn	0	1	0	0	0	1	2
Indet Dk Brown	0	0	1	0	0	0	1
Indet Lt Brown	0	0	1	0	0	2	3
Indet Mottled	1	0	0	0	1	2	4
Total	**1**	**1**	**2**	**2**	**2**	**6**	**14**

Table H-242. Debitage Recovery by Size and Material Type, AU1, 41CV380.

	Size (cm)							
Lithic Material	< 0.5	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Identified Types								
06-HL Tan	0	0	0	0	1	0	0	1
08-FH Yellow	0	7	10	2	0	3	0	22
14-FH Gray	0	0	4	0	0	0	0	4
15-Gry/Brn/Grn	0	0	1	0	3	2	0	6
17-Owl Crk Black	1	2	1	0	0	0	0	4
19-C Dr Gray	0	0	0	1	0	0	0	1
Subtotal	*1*	*9*	*16*	*3*	*4*	*5*	*0*	*38*
Unidentified Types								
Indet Black	0	19	3	4	1	0	0	27
Indet Dk Brown	0	0	12	2	0	0	0	14
Indet Dk Gray	25	224	62	7	0	0	0	318
Indet Lt Brown	13	97	30	19	5	3	0	167
Indet Lt Gray	55	67	50	19	8	0	0	199
Indet Misc.	30	267	72	30	1	2	1	403
Indet Mottled	0	0	0	10	4	5	0	19
Indet Trans	0	0	0	1	0	0	0	1
Indet White	0	25	9	9	0	1	0	44
Subtotal	*123*	*699*	*238*	*101*	*19*	*11*	*1*	*1192*
Total	**124**	**708**	**254**	**104**	**23**	**16**	**1**	**1230**

Table H-243. Binomial Statistic Results, AU1, 41CV380.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
06-HL Tan	1	less	less
08-FH Yellow	22	less	more
14-FH Gray	4	less	expected
15-Gry/Brn/Grn	6	less	expected
17-Owl Crk Black	4	less	expected
19-C Dr Gray	1	less	less
Total Indet	1192	more	na

1. Expected minimum = 192; expected maximum = 200.

2 Expected minimum = 2; expected maximum = 11.

Table H-244. Debitage Cortex Characteristics by Material Type, AU1, 41CV380.

Lithic Material	Partial Cortex	Indeterminate	No Cortex	Total
Identified Types				
06-HL Tan	1	0	0	1
08-FH Yellow	13	0	9	22
14-FH Gray	0	0	4	4
15-Gry/Brn/Grn	1	0	5	6
17-Owl Crk Black	0	0	4	4
19-C Dr Gray	0	0	1	1
Subtotal	*15*	*0*	*23*	*38*
Unidentified Types				
Indet Black	2	0	25	27
Indet Dk Brown	0	0	14	14
Indet Dk Gray	11	0	307	318
Indet Lt Brown	6	0	161	167
Indet Lt Gray	2	0	197	199
Indet Misc.	35	16	352	403
Indet Mottled	16	0	3	19
Indet Trans	0	0	1	1
Indet White	8	0	36	44
Subtotal	*80*	*16*	*1096*	*1192*
Total	**95**	**16**	**1119**	**1230**

Table H-245. Lithic Tools, AU1, 41CV380.

	Tool Type		
Lithic Material	late stage biface	utilized	Total
06-HL Tan	1	0	1
08-FH Yellow	0	2	2
17-Owl Crk Black	0	1	1
19-C Dr Gray	0	1	1
Indet Lt Brown	0	1	1
Indet Lt Gray	1	1	2
Indet Mottled	0	2	2
Indet White	0	1	1
Total	2	9	11

Table H-246. Faunal Recovery, AU1, 41CV380.

	Element		
Taxon	Long bone, unident.	unknown	Total
Vertebrates			
Mammal (sm/med)	1	0	1
Mammal (med/lg)	11	0	11
Total	**12**	**0**	**12**
Bivalves			
Unionacea	0	2	2

Table H-247. Debitage Recovery by Size and Material Type, AU2, 41CV380.

	Size (cm)						
Lithic Material	<0.5	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Identified Types							
06-HL Tan	0	0	0	0	0	1	1
08-FH Yellow	0	4	0	0	0	0	4
14-FH Gray	0	2	0	0	0	0	2
15-Gry/Brn/Grn	0	0	0	2	0	0	2
17-Owl Crk Black	0	0	1	0	0	0	1
Subtotal	*0*	*6*	*1*	*2*	*0*	*1*	*10*
Unidentified Types							
Indet Black	20	0	3	0	0	0	23
Indet Dk Brown	0	0	0	0	1	0	1
Indet Dk Gray	12	132	26	7	0	1	178
Indet Lt Brown	10	50	35	0	0	0	95
Indet Lt Gray	33	40	8	21	1	0	103
Indet Misc.	20	127	29	8	0	2	186
Indet Mottled	0	0	0	0	2	1	3
Indet White	0	4	4	1	0	0	9
Subtotal	*95*	*353*	*105*	*37*	*4*	*4*	*598*
Total	**95**	**359**	**106**	**39**	**4**	**5**	**608**

Table H-248. Binomial Statistic Results, AU2, 41CV380.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
06-HL Tan	1	less	expected
08-FH Yellow	4	less	expected
14-FH Gray	2	less	expected
15-Gry/Brn/Grn	2	less	expected
17-Owl Crk Black	1	less	expected
Total Indet	598	more	na

1. Expected minimum = 83; expected maximum = 120.
2. Expected minimum = 0; expected maximum = 5.

Table H-249. Debitage Cortex Characteristics by Material Type, AU2, 41CV380.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
06-HL Tan	1	0	1
08-FH Yellow	0	4	4
14-FH Gray	0	2	2
15-Gry/Brn/Grn	1	1	2
17-Owl Crk Black	0	1	1
Subtotal	*2*	*8*	*10*
Unidentified Types			
Indet Black	0	23	23
Indet Dk Brown	1	0	1
Indet Dk Gray	6	172	178
Indet Lt Brown	2	93	95
Indet Lt Gray	3	100	103
Indet Misc.	24	162	186
Indet Mottled	3	0	3
Indet White	0	9	9
Subtotal	*39*	*559*	*598*
Total	**41**	**567**	**608**

Table H-250. Debitage Recovery by Size and Material Type, AU1, 41CV389.

	Size (cm)					
Lithic Material	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Identified Types						
03-AM Gray	3	0	1	0	0	4
06-HL Tan	0	0	16	8	1	25
07-Foss Pale Brown	0	0	0	0	1	1
08-FH Yellow	1	2	3	1	1	8
09-HL Tr Brown	0	0	1	3	0	4
14-FH Gray	0	0	2	1	0	3
15-Gry/Brn/Grn	5	7	4	5	1	22
17-Owl Crk Black	0	1	2	0	0	3
18-C Mottled	0	0	0	1	1	2
19-C Dr Gray	0	0	1	1	0	2
22-C Mott/Flecks	0	0	0	1	1	2
Subtotal	*9*	*10*	*30*	*21*	*6*	*76*
Unidentified Types						
Indet Black	0	2	1	1	0	4
Indet Dk Brown	2	22	8	3	1	36
Indet Dk Gray	3	10	3	3	0	19
Indet Lt Brown	45	62	47	16	0	170
Indet Lt Gray	1	5	2	0	0	8
Indet Misc.	5	3	1	2	1	12
Indet Mottled	2	5	11	12	2	32
Indet Trans	1	4	6	0	0	11
Indet White	5	7	13	1	0	26
Subtotal	*64*	*120*	*92*	*38*	*4*	*318*
Total	**73**	**130**	**122**	**59**	**10**	**394**

Table H-251. Binomial Statistic Results, AU1, 41CV389.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
03-AM Gray	4	less	expected
06-HL Tan	25	expected	more
07-Foss Pale Brown	1	less	less
08-FH Yellow	8	less	expected
09-HL Tr Brown	4	less	expected
14-FH Gray	3	less	expected
15-Gry/Brn/Grn	22	expected	more
17-Owl Crk Black	3	less	expected
18-C Mottled	2	less	expected
19-C Dr Gray	2	less	expected
22-C Mott/Flecks	2	less	expected
Total Indet	318	more	na

1. Expected minimum = 22; expected maximum = 43.
2. Expected minimum = 2; expected maximum = 12.

Table H-252. Debitage Cortex Characteristics by Material Type, AU1, 41CV389.

Lithic Material	Partial Cortex	Indeterminate	No Cortex	Total
Identified Types				
03-AM Gray	1	0	3	4
06-HL Tan	2	0	23	25
07-Foss Pale Brown	1	0	0	1
08-FH Yellow	4	0	4	8
09-HL Tr Brown	1	0	3	4
14-FH Gray	0	0	3	3
15-Gry/Brn/Grn	2	0	20	22
17-Owl Crk Black	0	0	3	3
18-C Mottled	2	0	0	2
19-C Dr Gray	0	0	2	2
22-C Mott/Flecks	2	0	0	2
Subtotal	*15*	*0*	*61*	*76*
Unidentified Types				
Indet Black	0	0	4	4
Indet Dk Brown	11	0	25	36
Indet Dk Gray	3	0	16	19
Indet Lt Brown	19	3	148	170
Indet Lt Gray	1	0	7	8
Indet Misc.	8	0	4	12
Indet Mottled	18	2	12	32
Indet Trans	4	0	7	11
Indet White	3	0	23	26
Subtotal	*67*	*5*	*246*	*318*
Total	**82**	**5**	**307**	**394**

Table H-253. Lithic Tools, AU1, 41CV389.

	Tool Type					
Lithic Material	graver	late stage biface	middle stage biface	spokeshave	utilized	Total
06-HL Tan	0	1	0	1	0	2
09-HL Tr Brown	1	0	0	0	1	2
22-C Mott/Flecks	0	0	0	0	1	1
Indet Dk Gray	0	0	1	0	0	1
Indet Mottled	0	0	0	0	2	2
Total	**1**	**1**	**1**	**1**	**4**	**8**

Table H-254. Faunal Recovery, AU1, 41CV389.

	Element							
Taxon	Indeterminate	Long bone, unident.	Mandible	Plastron	left	right	unknown	Total
Vertebrates								
Indeterminate/unknown	0	11	0	0	0	0	0	11
Mammal (medium)	1	0	0	0	0	0	0	1
Mammal (med/lg)	1	0	1	0	0	0	0	2
Mammal (lg/vlg)	10	2	0	0	0	0	0	12
Mammal (very lg)	0	2	0	0	0	0	0	2
Testudinata	0	0	0	1	0	0	0	1
Total	**12**	**15**	**1**	**1**	**0**	**0**	**0**	**29**
Bivalves								
Amblema plicata	0	0	0	0	7	10	0	17
Amblema sp.	0	0	0	0	8	2	0	10
Lampsilis sp.	0	0	0	0	1	2	0	3
Lampsilis teres	0	0	0	0	2	0	0	2
Quadrula apiculata	0	0	0	0	1	0	0	1
Quadrula houstonensis	0	0	0	0	0	1	0	1
Tritigonia verrucosa	0	0	0	0	0	1	0	1
Unionacea	0	0	0	0	19	14	2	35
Total	**0**	**0**	**0**	**0**	**38**	**30**	**2**	**70**

Table H-255. Debitage Recovery by Size and Material Type, AU2, 41CV389.

Lithic Material	Size (cm) < 0.5	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Identified Types								
02-C White	0	0	0	0	0	1	0	1
06-HL Tan	0	1	2	8	9	4	0	24
08-FH Yellow	4	8	12	10	1	2	0	37
09-HL Tr Brown	0	0	0	6	5	2	1	14
10-HL Blue	0	0	0	1	0	0	0	1
14-FH Gray	0	0	0	4	0	1	0	5
15-Gry/Brn/Grn	0	2	0	3	4	3	0	12
17-Owl Crk Black	0	0	6	3	0	0	0	9
18-C Mottled	0	0	0	2	1	2	0	5
19-C Dr Gray	0	0	0	3	2	0	0	5
22-C Mott/Flecks	0	0	0	0	0	3	0	3
Subtotal	*4*	*11*	*20*	*40*	*22*	*18*	*1*	*116*
Unidentified Types								
Indet Black	0	14	29	12	1	2	0	58
Indet Dk Brown	9	29	55	31	7	0	0	131
Indet Dk Gray	2	64	75	31	6	2	0	180
Indet Lt Brown	10	143	108	70	21	3	0	355
Indet Lt Gray	0	6	47	7	1	0	0	61
Indet Misc.	10	42	30	39	8	1	0	130
Indet Mottled	3	15	11	6	9	5	0	49
Indet Trans	0	3	29	8	5	0	0	45
Indet White	0	11	7	7	6	0	0	31
Subtotal	*34*	*327*	*391*	*211*	*64*	*13*	*0*	*1040*
Quartz	0	0	1	0	0	0	0	1
Quartzite	0	0	0	1	0	0	0	1
Total	**38**	**338**	**412**	**252**	**86**	**31**	**1**	**1158**

Table H-256. Binomial Statistic Results, AU2, 41CV389.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
02-C White	1	less	less
06-HL Tan	24	less	more
08-FH Yellow	37	less	more
09-HL Tr Brown	14	less	expected
10-HL Blue	1	less	less
14-FH Gray	5	less	expected
15-Gry/Brn/Grn	12	less	expected
17-Owl Crk Black	9	less	expected
18-C Mottled	5	less	expected
19-C Dr Gray	5	less	expected
22-C Mott/Flecks	3	less	less
Quartz	1	less	less
Quartzite	1	less	less
Total Indet	1040	more	na

1. Expected minimum = 65; expected maximum = 99.
2. Expected minimum = 4; expected maximum = 17.

Table H-257. Debitage Cortex Characteristics by Material Type, AU2, 41CV389.

Lithic Material	Partial Cortex	Indeterminate	No Cortex	Total
Identified Types				
02-C White	1	0	0	1
06-HL Tan	9	0	15	24
08-FH Yellow	4	0	33	37
09-HL Tr Brown	5	2	7	14
10-HL Blue	0	0	1	1
14-FH Gray	4	0	1	5
15-Gry/Brn/Grn	4	0	8	12
17-Owl Crk Black	4	0	5	9
18-C Mottled	2	0	3	5
19-C Dr Gray	4	0	1	5
22-C Mott/Flecks	3	0	0	3
Subtotal	*40*	*2*	*74*	*116*
Unidentified Types				
Indet Black	2	0	56	58
Indet Dk Brown	4	0	127	131
Indet Dk Gray	11	0	169	180
Indet Lt Brown	41	0	314	355
Indet Lt Gray	0	0	61	61
Indet Misc.	33	0	97	130
Indet Mottled	40	0	9	49
Indet Trans	2	0	43	45
Indet White	3	0	28	31
Subtotal	*136*	*0*	*904*	*1040*
Quartz	0	0	1	1
Quartzite	0	0	1	1
Total	**176**	**2**	**980**	**1158**

Table H-258. Projectile Points, AU2, 41CV389.

	Point Type					
Lithic Material	Castroville	Darl	Ellis	Indeterminate	Other Dart	Total
09-HL Tr Brown	1	0	1	0	0	2
15-Gry/Brn/Grn	1	0	0	0	0	1
17-Owl Crk Black	0	0	0	0	1	1
Indet Lt Brown	0	0	0	1	0	1
Indet Lt Gray	0	1	0	0	0	1
Total	**2**	**1**	**1**	**1**	**1**	**6**

Table H-259. Lithic Tools, AU2, 41CV389.

	Core Type	Tool Type											
Lithic Material	single platform	complex scraper	Crushing/Abrading	drill	edge modified	end scraper	finished biface	graver	late stage biface	middle stage biface	side scraper	utilized	Total
06-HL Tan	0	0	0	1	0	0	0	0	0	0	0	0	1
07-Foss Pale Brown	0	1	0	0	0	0	0	0	0	0	0	0	1
08-FH Yellow	0	0	0	0	0	0	0	0	0	0	1	0	1
09-HL Tr Brown	0	0	0	0	1	0	0	0	0	0	0	0	1
17-Owl Crk Black	0	0	0	0	0	0	0	0	1	0	0	0	1
19-C Dr Gray	0	0	0	0	0	1	0	0	0	0	0	0	1
22-C Mott/Flecks	0	0	0	0	0	0	0	0	0	2	0	0	2
24-C Br Fossil	0	0	1	0	0	0	0	0	0	0	0	0	1
Indet Dk Brown	1	0	0	1	0	0	1	0	0	0	0	0	3
Indet Lt Brown	0	0	0	0	1	0	0	0	2	0	0	1	4
Indet Lt Gray	0	0	0	0	0	0	0	1	0	0	0	0	1
Indet Mottled	0	0	0	0	0	0	0	0	1	0	0	0	1
Indet Trans	0	0	0	0	0	0	0	1	0	0	0	0	1
Indet White	0	0	0	0	0	0	0	0	1	0	0	1	2
Total	**1**	**1**	**1**	**2**	**2**	**1**	**1**	**2**	**5**	**2**	**1**	**2**	**21**

Table H-260. Faunal Recovery, AU2, 41CV389.

Taxon	Element																					Total
	Antler	Astragalus	Calcaneus	Carapace	Distal phr'ange	Fused 2&3 carpals	Indeterminate	Lateral malleolus	Long bone, unident.	Mandible	Metapodial	Metatarsal	Phalange	Rib	Scapula	Tibia	Tooth	Vertebra	left	right	unknown	
Vertebrates																						
Artiodactyla	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	-	-	-	3
Artiodactyls (med)	0	2	0	0	0	0	0	1	1	0	2	0	6	0	1	2	1	0	-	-	-	16
Aves (large)	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	-	-	-	2
Cricetidae (small)	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	1
Leporidae	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	-	-	-	1
Mammal (micro/s)	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	-	-	-	1
Mammal (sm/med)	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	-	-	-	1
Mammal (medium)	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	-	-	-	5
Mammal (med/lg)	0	0	0	0	0	0	27	0	24	0	0	0	0	0	0	0	2	1	-	-	-	54
Mammal (lg/vlg)	0	0	0	0	0	0	14	0	110	2	0	0	0	1	1	0	0	1	-	-	-	129
Mammal (unk. size)	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	-	-	-	6
Odocoileus sp.	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	0	-	-	-	5
Rodent (medium)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	-	-	-	2
Sylvilagus sp.	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	1
Testudinata	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	1
Vertebrate-undiffer.	0	0	0	0	0	0	4	0	1	0	0	0	0	0	0	0	0	0	-	-	-	5
Total	**1**	**2**	**1**	**1**	**1**	**1**	**51**	**1**	**146**	**2**	**2**	**1**	**6**	**1**	**2**	**4**	**6**	**4**	**-**	**-**	**-**	**233**
Bivalves																						
Amblema plicata	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	5	0	9
Amblema sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	0	0	3
Lampsilis sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	0	0	3
Unionacea	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	1	9
Total	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**14**	**9**	**1**	**24**

Table H-261. Faunal Recovery, AU3, 41CV389.

Taxon	Element: Indeterminate	Long bone, unident.	left	Total
Vertebrates				
Mammal (med/lg)	0	1	-	1
Mammal (lg/vlg)	0	1	-	1
Vertebrate-undiffer.	1	2	-	3
Total	**1**	**4**	**-**	**5**
Bivalves				
Lampsilis sp.	-	-	1	1

Table H-262. Debitage Recovery by Size and Material Type, AU1, 41CV397.

Lithic Material	Size (cm): < 0.5	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Identified Types							
06-HL Tan	0	0	1	2	1	3	7
15-Gry/Brn/Grn	0	0	2	1	3	3	9
Subtotal	*0*	*0*	*3*	*3*	*4*	*6*	*16*
Unidentified Types							
Indet Dk Brown	0	0	3	1	0	0	4
Indet Lt Brown	1	8	6	1	0	0	16
Subtotal	*1*	*8*	*9*	*2*	*0*	*0*	*20*
Total	**1**	**8**	**12**	**5**	**4**	**6**	**36**

Table H-263. Binomial Statistic Results, AU1, 41CV397.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
06-HL Tan	7	expected	less
15-Gry/Brn/Grn	9	expected	less
Total Indet	20	more	na

1. Expected minimum = 6; expected maximum = 17.

2. Expected minimum = 4; expected maximum = 12.

Table H-264. Debitage Cortex Characteristics by Material Type, AU2, 41CV397.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
06-HL Tan	4	3	7
15-Gry/Brn/Grn	5	4	9
Subtotal	*9*	*7*	*16*
Unidentified Types			
Indet Dk Brown	0	4	4
Indet Lt Brown	5	11	16
Subtotal	*5*	*15*	*20*
Total	**14**	**22**	**36**

Table H-265. Debitage Recovery by Size and Material Type, AU1, 41CV403.

Lithic Material	Size (cm) <0.5	0.5-0.9	0.9-1.2	1.2-1.8	1.8-2.6	2.6-5.2	>5.2	Total
Identified Types								
01-HL Blue(l)	0	0	1	0	0	0	0	1
02-C White	0	0	1	2	0	1	0	4
03-AM Gray	0	0	0	1	0	1	0	2
06-HL Tan	0	4	3	12	6	2	2	29
08-FH Yellow	3	35	3	8	2	3	0	54
09-HL Tr Brown	0	0	0	0	0	1	0	1
11-ER Flat	0	0	0	1	1	0	0	2
13-ER Flecked	0	0	0	1	2	0	0	3
14-FH Gray	0	1	12	5	0	3	0	21
15-Gry/Brn/Grn	0	0	13	31	22	12	1	79
17-Owl Crk Black	0	7	20	8	2	0	0	37
18-C Mottled	0	0	0	1	0	2	0	3
19-C Dr Gray	0	0	7	2	3	1	1	14
22-C Mott/Flecks	0	0	0	1	0	2	1	4
Subtotal	*3*	*47*	*60*	*73*	*38*	*28*	*5*	*254*
Unidentified Types								
Indet Black	9	6	0	2	0	0	0	17
Indet Dk Brown	0	30	9	12	3	2	0	56
Indet Dk Gray	16	42	42	21	6	1	0	128
Indet Lt Brown	11	64	56	24	15	6	0	176
Indet Lt Gray	0	24	40	20	11	2	0	97
Indet Misc.	5	36	0	8	2	0	0	51
Indet Mottled	0	7	11	13	21	10	0	62
Indet Trans	0	0	2	0	1	0	0	3
Indet White	3	10	4	9	3	[illegible]	0	30
Subtotal	*44*	*219*	*164*	*109*	*62*	*22*	*0*	*620*
Total	**47**	**266**	**224**	**182**	**100**	**50**	**5**	**874**

Table H-266. Binomial Statistic Results, AU1, 41CV403.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
01-HL Blue(l)	1	less	less
02-C White	4	less	less
03-AM Gray	2	less	less
06-HL Tan	29	less	more
08-FH Yellow	54	expected	more
09-HL Tr Brown	1	less	less
11-ER Flat	2	less	less
13-ER Flecked	3	less	less
14-FH Gray	21	less	expected
15-Gry/Brn/Grn	79	more	more
17-Owl Crk Black	37	less	more
18-C Mottled	3	less	less
19-C Dr Gray	14	less	expected
22-C Mott/Flecks	4	less	less
Total Indet	620	more	na

1. Expected minimum = 44; expected maximum = 73.
2. Expected minimum = 10; expected maximum = 26.

Table H-267. Debitage C Characteristics by Material Type, AU1, 41CV403.

Lithic Material	All Cortex	Partial Cortex	Indeterminate	No Cortex	Total
Identified Types					
01-HL Blue(I)	0	0	0	1	1
02-C White	0	0	0	4	4
03-AM Gray	0	0	0	2	2
06-HL Tan	0	4	0	25	29
08-FH Yellow	0	8	0	46	54
09-HL Tr Brown	0	1	0	0	1
11-ER Flat	0	0	0	2	2
13-ER Flecked	0	0	0	3	3
14-FH Gray	0	0	0	21	21
15-Gry/Brn/Grn	0	14	0	65	79
17-Owl Crk Black	0	0	0	37	37
18-C Mottled	0	2	0	1	3
19-C Dr Gray	0	3	0	11	14
22-C Mott/Flecks	0	1	0	3	4
Subtotal	*0*	*33*	*0*	*221*	*254*
Unidentified Types					
Indet Black	0	5	0	12	17
Indet Dk Brown	0	3	0	53	56
Indet Dk Gray	0	13	0	115	128
Indet Lt Brown	0	14	2	160	176
Indet Lt Gray	0	11	0	86	97
Indet Misc.	0	6	0	45	51
Indet Mottled	0	32	0	30	62
Indet Trans	0	2	0	1	3
Indet White	1	2	0	27	30
Subtotal	*1*	*88*	*2*	*529*	*620*
Total	1	121	2	750	874

Table H-268. Lithic Tools, AU1, 41CV403.

	Core Type		Tool Type					
Lithic Material	multiple platform	single platform	Chopper Type A	Crushing/Abrading	edge modified	finished biface	middle stage biface	Total
07-Foss Pale Brown	0	1	0	0	1	0	0	2
14-FH Gray	0	0	0	1	0	0	0	1
19-C Dr Gray	1	0	0	0	1	1	0	3
22-C Mott/Flecks	0	0	1	0	0	0	0	1
Indet Dk Gray	0	0	0	0	0	0	1	1
Indet Mottled	0	0	1	0	0	0	0	1
Total	1	1	2	1	2	1	1	9

Table H-269. Faunal Recovery, AU1, 41CV403.

	Element						
Taxon	Antler	Indeterminate	Long bone, unident.	Metapodial	Tooth	unknown	Total
Vertebrates							
Artiodactyla	0	0	0		1	-	1
Mammal (med/lg)	0	1	1	0	0	-	2
Mammal (lg/vlg)	0	3	32	1	0	-	36
Mammal (unk. size)	0	3	0	0	0	-	3
Odocoileus sp.	1	0	0	0	0	-	1
Vertebrate-undiffer.	0	1	0	0	0	-	1
Total	1	8	33	1	1	-	44
Bivalves							
Unionacea	-	-	-	-	-	1	1

Table H-270. Debitage Recovery by Size and Material Type, AU2, 41CV403.

	Size (cm)							
Lithic Material	<0.5	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Identified Types								
02-C White	0	0	0	0	0	1	0	1
06-HL Tan	0	5	11	10	1	4	0	31
07-Foss Pale Brown	0	0	0	1	1	2	0	4
08-FH Yellow	0	20	37	9	5	0	0	71
09-HL Tr Brown	0	0	0	2	0	0	0	2
11-ER Flat	0	0	6	0	0	0	0	6
13-ER Flecked	0	0	1	5	3	2	0	11
15-Gry/Brn/Grn	0	0	8	18	8	5	0	39
17-Owl Crk Black	0	1	13	7	3	0	0	24
18-C Mottled	0	0	0	1	3	0	0	4
19-C Dr Gray	0	0	0	0	2	6	0	8
21-C Lgt Gray	0	0	0	0	0	1	0	1
22-C Mott/Flecks	0	0	0	0	1	0	1	2
28-Table Rock Flat	0	0	0	0	0	2	0	2
Subtotal	*0*	*26*	*76*	*53*	*27*	*23*	*1*	*206*
Unidentified Types								
Indet Black	16	10	7	9	0	0	0	42
Indet Dk Brown	0	7	11	2	3	0	0	23
Indet Dk Gray	11	98	73	25	14	0	0	221
Indet Lt Brown	37	88	51	27	18	1	0	222
Indet Lt Gray	11	23	8	37	7	1	0	87
Indet Misc.	0	27	12	6	10	5	0	60
Indet Mottled	0	0	5	6	14	15	0	40
Indet Trans	0	0	5	1	0	0	0	6
Indet White	0	11	9	10	7	0	0	37
Subtotal	*75*	*264*	*181*	*123*	*73*	*22*	*0*	*738*
Total	**75**	**290**	**257**	**176**	**100**	**45**	**1**	**944**

Table H-271. Binomial Statistic Results, AU2, 41CV403.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
02-C White	1	less	less
06-HL Tan	31	less	more
07-Foss Pale Brown	4	less	less
08-FH Yellow	71	expected	more
09-HL Tr Brown	2	less	less
11-ER Flat	6	less	less
13-ER Flecked	11	less	expected
15-Gry/Brn/Grn	39	less	more
17-Owl Crk Black	24	less	more
18-C Mottled	4	less	less
19-C Dr Gray	8	less	expected
21-C Lgt Gray	1	less	less
22-C Mott/Flecks	2	less	less
28-Table Rock Flat	2	less	less
Total Indet	738	more	ns

1. Expected minimum = 48; expected maximum = 78.

2. Expected minimum = 7; expected maximum = 22.

Table H-272. Debitage Cortex Characteristics by Material Type, AU2, 41CV403.

Lithic Material	All Cortex	Partial Cortex	Indeterminate	No Cortex	Total
Identified Types					
02-C White	0	1	0	0	1
06-HL Tan	0	2	0	29	31
07-Foss Pale Brown	0	1	0	3	4
08-FH Yellow	0	10	0	61	71
09-HL Tr Brown	0	0	0	2	2
11-ER Flat	0	0	0	6	6
13-ER Flecked	0	1	0	10	11
15-Gry/Brn/Grn	0	2	0	37	39
17-Owl Crk Black	0	8	0	16	24
18-C Mottled	0	0	0	4	4
19-C Dr Gray	0	3	0	5	8
21-C Lgt Gray	0	0	0	1	1
22-C Mott/Flecks	0	2	0	0	2
28-Table Rock Flat	0	2	0	0	2
Subtotal	*0*	*32*	*0*	*174*	*206*
Unidentified Types					
Indet Black	0	2	0	40	42
Indet Dk Brown	0	6	0	17	23
Indet Dk Gray	0	29	0	192	221
Indet Lt Brown	0	38	0	184	222
Indet Lt Gray	0	26	0	61	87
Indet Misc.	0	22	7	31	60
Indet Mottled	0	27	0	13	40
Indet Trans	0	1	0	5	6
Indet White	1	12	4	20	37
Subtotal	*1*	*163*	*11*	*563*	*738*
Total	**1**	**195**	**11**	**737**	**944**

Table H-273. Projectile Points, AU2, 41CV403.

	Point Type		
Lithic Material	Castroville	Other Dart	Total
08-FH Yellow	1	1	2
09-HL Tr Brown	1	0	1
14-FH Gray	0	1	1
Total	**2**	**2**	**4**

Table H-274. Lithic Tools, AU2, 41CV403.

	Core Type	Tool Type								
Lithic Material	multiple platform	Clear Fork Type B	Crushing/Abrading	early stage biface	edge modified	finished biface	late stage biface	middle stage biface	utilized	Total
02-C White	0	0	0	0	0	0	0	0	1	1
06-HL Tan	0	0	0	0	1	1	1	0	0	3
07-Foss Pale Brown	0	0	0	1	1	0	0	0	1	3
08-FH Yellow	0	0	0	1	0	0	0	0	0	1
09-HL Tr Brown	0	0	0	0	0	1	0	0	0	1
14-FH Gray	0	0	0	0	0	0	1	0	0	1
18-C Mottled	1	0	0	0	0	0	0	1	0	2
22-C Mott/Flecks	0	1	1	0	0	0	0	0	0	2
Indet Lt Brown	0	0	0	0	0	0	0	0	1	1
Indet Mottled	1	0	0	0	0	0	0	0	0	1
Total	**2**	**1**	**1**	**2**	**2**	**2**	**2**	**1**	**3**	**16**

Table H-275. Faunal Recovery, AU2, 41CV403.

	Element											
Taxon	Cranium	Humerus	Indeterminate	Long bone, unident.	Mandible	Metapodial	Metatarsal	Rib	Scapula	Tibia	left	Total
Vertebrates												
Artiodactyls (med)	0	1	0	0	0	1	0	1	3	2	-	8
Mammal (med/lg)	13	0	10	5	1	0	0	0	0	0	-	29
Mammal (lg/vlg)	0	0	10	38	0	0	0	1	0	0	-	49
Odocoileus sp.	0	0	0	0	0	0	1	0	1	0	-	2
Vertebrate-undiffer.	0	0	3	1	0	0	0	0	0	0	-	4
Total	**13**	**1**	**23**	**44**	**1**	**1**	**1**	**2**	**4**	**2**	**-**	**92**
Bivalves												
Megalonaias nervosa	-	-	-	-	-	-	-	-	-	-	1	1

Table H-276. Debitage Recovery by Size and Material Type, AU3, 41CV403.

	Size (cm)							
Lithic Material	<0.5	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.3	2.6 - 5.2	>5.2	Total
Identified Types								
02-C White	0	0	8	7	3	1	0	19
03-AM Gray	0	0	0	5	2	1	0	8
06-HL Tan	4	24	64	70	16	4	1	183
07-Foss Pale Brown	0	5	15	12	8	1	1	42
08-FH Yellow	5	24	31	12	2	2	0	76
11-ER Flat	0	0	0	0	0	1	0	1
13-ER Flecked	0	15	5	2	0	0	0	22
14-FH Gray	0	0	0	5	1	0	0	6
15-Gry/Brn/Grn	3	10	6	1	8	2	0	30
17-Owl Crk Black	0	68	22	4	1	0	0	95
18-C Mottled	0	15	2	9		5	0	37
19-C Dr Gray	0	0	7	22	·	0	0	37
22-C Mott/Flecks	0	0	0	14	17	5	0	36
Subtotal	*12*	*161*	*160*	*163*	*72*	*22*	*2*	*592*
Unidentified Types								
Indet Black	23	33	1	0	0	0	0	57
Indet Dk Brown	50	100	5	13	1	2	0	171
Indet Dk Gray	127	218	129	44	7	1	0	526
Indet Lt Brown	171	288	99	47	12	3	0	620
Indet Lt Gray	68	79	47	10	12	2	0	218
Indet Misc.	0	34	21	6	3	0	0	64
Indet Mottled	0	10	19	17	19	5	2	72
Indet Trans	1	2	10	4	0	0	0	17
Indet White	0	37	14	10	1	2	0	64
Subtotal	*440*	*801*	*345*	*151*	*55*	*15*	*2*	*1809*
Total	452	962	505	314	127	37	4	2401

Table H-277. Binomial Statistic Results, AU3, 41CV403.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
02-C White	19	less	less
03-AM Gray	8	less	less
06-HL Tan	183	expected	more
07-Foss Pale Brown	42	less	expected
08-FH Yellow	76	less	more
11-ER Flat	1	less	less
13-ER Flecked	22	less	less
14-FH Gray	6	less	less
15-Gry/Brn/Grn	30	less	less
17-Owl Crk Black	95	less	more
18-C Mottled	37	less	expected
19-C Dr Gray	37	less	expected
22-C Mott/Flecks	36	less	expected
Total Indet	1809	more	less

1. Expected minimum = 144; expected maximum = 193.
2. Expected minimum = 33; expected maximum = 58.

Table H-278. Debitage Cortex Characteristics by Material Type, AU3, 41CV403.

Lithic Material	Partial Cortex	Indeterminate	No Cortex	Total
Identified Types				
02-C White	1	1	17	19
03-AM Gray	1	0	7	8
06-HL Tan	19	0	164	183
07-Foss Pale Brown	7	0	35	42
08-FH Yellow	16	0	60	76
11-ER Flat	0	0	1	1
13-ER Flecked	0	0	22	22
14-FH Gray	1	0	5	6
15-Gry/Brn/Grn	3	0	27	30
17-Owl Crk Black	3	0	92	95
18-C Mottled	9	0	28	37
19-C Dr Gray	17	0	20	37
22-C Mott/Flecks	7	0	29	36
Subtotal	*84*	*1*	*507*	*592*
Unidentified Types				
Indet Black	0	0	57	57
Indet Dk Brown	3	0	168	171
Indet Dk Gray	41	1	484	526
Indet Lt Brown	57	0	563	620
Indet Lt Gray	21	0	197	218
Indet Misc.	28	7	29	64
Indet Mottled	59	2	11	72
Indet Trans	3	0	14	17
Indet White	6	0	58	64
Subtotal	*218*	*10*	*1581*	*1809*
Total	302	11	2088	2401

Table H-279. Projectile Poin AU3, 41CV403.

	Point Type					
Lithic Material	Castroville	Montell	Other Dart	Pedernales	Scallorn	Total
06-HL Tan	0	1	0	0	1	2
08-FH Yellow	0	0	1	0	0	1
09-HL Tr Brown	1	0	0	0	0	1
17-Owl Crk Black	1	0	0	0	0	1
Indet Dk Gray	0	0	0	1	0	1
Indet Lt Brown	1	0	0	0	0	1
Total	**3**	**1**	**1**	**1**	**1**	**7**

Table H-280. Lithic Tools, AU3, 41CV403.

	Tool Type							
Lithic Material	early stage biface	edge modified	end scraper	finished biface	late stage biface	middle stage biface	utilized	Total
06-HL Tan	0	1	0	1	1	0	1	4
08-FH Yellow	0	0	0	0	1	0	0	1
14-FH Gray	0	0	0	0	0	0	1	1
15-Gry/Brn/Grn	0	0	0	0	0	0	1	1
18-C Mottled	1	0	1	0	0	0	1	3
19-C Dr Gray	0	0	0	0	0	1	0	1
22-C Mott/Flecks	0	0	0	0	0	0	1	1
Indet Dk Brown	0	1	0	0	0	0	0	1
Indet Dk Gray	0	0	0	1	0	0	0	1
Indet Lt Gray	0	0	0	0	1	0	1	2
Indet Trans	0	0	0	1	0	0	0	1
Total	**1**	**2**	**1**	**3**	**3**	**1**	**6**	**17**

Table H-281. Faunal Recovery, AU3, 41CV403.

	Element									
Taxon	Carapace	indeterminate	Long bone, unident.	Mandible	Metapodial	Phalange	Tibia	Tooth	Vertebra	Total
Vertebrates										
Artiodactyls (med)	0	0	0	0	1	1	0	2	0	4
Mammal (small)	0	0	1	0	0	0	0	0	0	1
Mammal (sm/med)	0	0	14	0	0	0	0	0	0	14
Mammal (med/lg)	0	1	12	1	0	0	0	0	0	14
Mammal (lg/vlg)	0	2	84	0	0	0	0	0	2	88
Mammal (unk. size)	0	19	3	0	0	0	0	0	0	22
Odocoileus sp.	0	0	0	0	0	0	0	2	0	2
Sylvilagus sp.	0	0	0	0	0	0	1	0	0	1
Testudinata	2	0	0	0	0	0	0	0	0	2
Vertebrate-undiffer.	0	19	0	0	0	0	0	0	0	19
Total	**2**	**41**	**114**	**1**	**1**	**1**	**1**	**4**	**2**	**167**

Table H-282. Debitage Recovery by Size and Material Type, AU4, 41CV403.

Lithic Material	Size (cm) 0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Identified Types							
03-AM Gray	1	1	0	0	0	0	2
06-HL Tan	0	0	2	2	0	0	4
07-Foss Pale Brown	0	0	1	1	0	1	3
08-FH Yellow	1	0	3	3	1	0	8
17-Owl Crk Black	0	0	0	2	0	0	2
18-C Mottled	0	0	0	0	1	0	1
19-C Dr Gray	0	2	2	0	0	0	4
Subtotal	*2*	*3*	*8*	*8*	*2*	*1*	*24*
Unidentified Types							
Indet Black	0	0	1	0	0	0	1
Indet Dk Brown	0	0	1	0	2	0	3
Indet Dk Gray	1	6	4	0	0	0	11
Indet Lt Brown	3	4	2	4	0	0	13
Indet Lt Gray	4	0	0	2	0	0	6
Indet Misc.	0	0	3	0	0	0	3
Indet Mottled	1	0	1	2	5	0	9
Indet Trans	0	0	1	0	0	0	1
Indet White	1	2	6	0	0	0	9
Subtotal	*10*	*12*	*19*	*8*	*7*	*0*	*56*
Total	12	15	27	16	9	1	80

Table H-283. Binomial Statistic Results, AU4, 41CV403.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
03-AM Gray	2	less	expected
06-HL Tan	4	expected	expected
07-Foss Pale Brown	3	less	expected
08-FH Yellow	8	expected	more
17-Owl Crk Black	2	less	expected
18-C Mottled	1	less	expected
19-C Dr Gray	4	expected	expected
Total Indet	56	more	na

1. Expected minimum = 4; expected maximum = 16.

2. Expected minimum = 1; expected maximum = 7.

Table H-284. Debitage Cortex Characteristics by Material Type, AU4, 41CV403.

Lithic Material	Partial Cortex	Indeterminate	No Cortex	Total
Identified Types				
03-AM Gray	0	0	2	2
06-HL Tan	0	0	4	4
07-Foss Pale Brown	1	0	2	3
08-FH Yellow	2	0	6	8
17-Owl Crk Black	0	0	2	2
18-C Mottled	1	0	0	1
19-C Dr Gray	0	0	4	4
Subtotal	*4*	*0*	*20*	*24*
Unidentified Types				
Indet Black	1	0	0	1
Indet Dk Brown	1	0	2	3
Indet Dk Gray	5	0	6	11
Indet Lt Brown	3	0	10	13
Indet Lt Gray	3	0	3	6
Indet Misc.	1	0	2	3
Indet Mottled	8	0	1	9
Indet Trans	0	0	1	1
Indet White	1	1	7	9
Subtotal	*23*	*1*	*32*	*56*
Total	27	1	52	80

Table H-285. Projectile Points, AU4, 41CV403.

Lithic Material	Point Type Marshall	Morrill	Other Dart	Pedernales	Total
06-HL Tan	0	1	0	1	2
09-HL Tr Brown	1	0	0	0	1
14-FH Gray	0	0	1	0	1
Total	1	1	1	1	4

Table H-286. Debitage Recovery by Size and Material Type, AU1, 41CV478.

Lithic Material	Size (cm) 0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Identified Types						
02-C White	0	0	1	0	0	1
03-AM Gray	0	0	0	2	0	2
06-HL Tan	0	0	1	0	2	3
08-FH Yellow	0	1	0	0	1	2
14-FH Gray	1	0	0	0	0	1
22-C Mott/Flecks	0	0	1	0	0	1
Subtotal	*1*	*1*	*3*	*2*	*3*	*10*
Unidentified Types						
Indet Black	4	0	0	0	0	4
Indet Dk Brown	0	0	2	0	0	2
Indet Dk Gray	0	2	0	1	0	3
Indet Lt Brown	2	7	2	1	0	12
Indet Lt Gray	0	2	0	0	0	2
Indet Misc.	3	0	0	0	0	3
Indet Mottled	0	0	0	0	1	1
Indet White	0	0	1	1	0	2
Subtotal	*9*	*11*	*5*	*3*	*1*	*29*
Total	**10**	**12**	**8**	**5**	**4**	**39**

Table H-288. Debitage Cortex Characteristics by Material Type, AU1, 41CV478.

Lithic Material	No Cortex	Partial Cortex	Total
Identified Types			
02-C White	1	0	1
03-AM Gray	2	0	2
06-HL Tan	0	3	3
08-FH Yellow	1	1	2
14-FH Gray	1	0	1
22-C Mott/Flecks	1	0	1
Subtotal	*6*	*4*	*10*
Unidentified Types			
Indet Black	4	0	4
Indet Dk Brown	2	0	2
Indet Dk Gray	2	1	3
Indet Lt Brown	10	2	12
Indet Lt Gray	2	0	2
Indet Misc.	3	0	3
Indet Mottled	0	1	1
Indet White	2	0	2
Subtotal	*25*	*4*	*29*
Total	**31**	**8**	**39**

Table H-287. Binomial Statistic Results, AU1, 41CV478.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
02-C White	1	less	expected
03-AM Gray	2	expected	expected
06-HL Tan	3	expected	expected
08-FH Yellow	2	expected	expected
14-FH Gray	1	less	expected
22-C Mott/Flecks	1	less	expected
Total Indet	29	more	na

1. Expected minimum = 2; expected maximum = 10.
2. Expected minimum = 0; expected maximum = 4.

Table H-289. Debitage Recovery by Size and Material Type, AU1, 41CV481.

Lithic Material	Size (cm) 0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Identified Types							
02-C White	0	0	0	1	0	0	1
06-HL Tan	0	0	0	0	1	0	1
08-FH Yellow	0	1	0	3	0	0	4
15-Gry/Brn/Grn	0	0	1	0	0	0	1
22-C Mott/Flecks	0	0	0	0	0	1	1
Subtotal	*0*	*1*	*1*	*4*	*1*	*1*	*8*
Unidentified Types							
Indet Lt Brown	1	14	6	3	2	0	26
Indet Lt Gray	0	0	1	0	2	0	3
Indet Misc.	0	0	0	1	0	0	1
Indet Mottled	0	1	3	5	4	1	14
Indet White	1	2	1	3	2	0	9
Subtotal	*2*	*17*	*11*	*12*	*10*	*1*	*53*
Total	**2**	**18**	**12**	**16**	**11**	**2**	**61**

Table H-290. Binomial Statistic Results, AU1, 41CV481.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
02-C White	1	less	expected
06-HL Tan	1	less	expected
08-FH Yellow	4	expected	expected
15-Gry/Brn/Grn	1	less	expected
22-C Mott/Flecks	1	less	expected
Total Indet	53	more	na

1. Expected minimum = 4; expected maximum = 16.
2. Expected minimum = 0; expected maximum = 4.

Table H-291. Debitage Cortex Characteristics by Material Type, AU1, 41CV481.

Lithic Material	Partial Cortex	Indeterminate	No Cortex	Total
Identified Types				
02-C White	0	0	1	1
06-HL Tan	1	0	0	1
08-FH Yellow	1	0	3	4
15-Gry/Brn/Grn	0	0	1	1
22-C Mott/Flecks	0	0	1	1
Subtotal	*2*	*0*	*6*	*8*
Unidentified Types				
Indet Lt Brown	9	0	17	26
Indet Lt Gray	2	0	1	3
Indet Misc.	1	0	0	1
Indet Mottled	6	0	8	14
Indet White	4	1	4	9
Subtotal	*22*	*1*	*30*	*53*
Total	**24**	**1**	**36**	**61**

Table H-292. Faunal Recovery, AU1, 41CV481.

Taxon	Element Carapace	Humerus	Indeterminate	Long bone, unident.	Total
Vertebrates					
Artiodactyls (med)	0	1	0	0	1
Mammal (med/lg)	0	0	4	0	4
Mammal (lg/vlg)	0	0	0	2	2
Testudinata	4	0	0	0	4
Vertebrate-undiffer.	0	0	2	0	2
Total	**4**	**1**	**6**	**2**	**13**

Table H-293. Debitage Recovery by Size and Material Type, AU2, 41CV481.

Lithic Material	Size (cm) <0.5	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Identified Types								
01-HL Blue(l)	0	0	1	0	0	0	0	1
02-C White	0	0	0	0	1	0	0	1
06-HL Tan	0	0	0	0	1	7	0	8
08-FH Yellow	0	1	1	2	4	0	0	8
14-FH Gray	0	0	0	1	0	0	0	1
15-Gry/Brn/Grn	0	1	0	2	1	1	0	5
18-C Mottled	0	0	0	0	0	1	0	1
Subtotal	*0*	*2*	*2*	*5*	*7*	*9*	*0*	*25*
Unidentified Types								
Indet Black	0	0	0	2	0	0	0	2
Indet Dk Brown	0	0	1	0	1	0	0	2
Indet Dk Gray	0	5	8	15	4	1	0	33
Indet Lt Brown	7	26	34	40	30	7	1	145
Indet Lt Gray	0	0	3	10	6	3	0	22
Indet Misc.	0	1	10	7	1	0	0	19
Indet Mottled	0	1	2	21	15	9	1	49
Indet Trans	0	0	1	0	0	0	0	1
Indet White	0	0	7	6	5	2	0	20
Subtotal	*7*	*33*	*66*	*101*	*62*	*22*	*2*	*293*
Total	**7**	**35**	**68**	**106**	**69**	**31**	**2**	**318**

Table H-294. Binomial Statistic Results, AU2, 41CV481.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
01-HL Blue(l)	1	less	expected
02-C White	1	less	expected
06-HL Tan	8	less	more
08-FH Yellow	8	less	more
14-FH Gray	1	less	expected
15-Gry/Brn/Grn	5	less	expected
18-C Mottled	1	less	expected
Total Indet	293	more	na

1. Expected minimum = 28; expected maximum = 51.
2. Expected minimum = 1; expected maximum = 7.

Table H-295. Debitage Cortex Characteristics by Material Type, AU2, 41CV481.

Lithic Material	Partial Cortex	Indeterminate	No Cortex	Total
Identified Types				
01-HL Blue(l)	0	0	1	1
02-C White	0	0	1	1
06-HL Tan	7	0	1	8
08-FH Yellow	4	0	4	8
14-FH Gray	0	0	1	1
15-Gry/Brn/Grn	3	0	2	5
18-C Mottled	0	0	1	1
Subtotal	*14*	*0*	*11*	*25*
Unidentified Types				
Indet Black	1	0	1	2
Indet Dk Brown	0	0	2	2
Indet Dk Gray	6	0	27	33
Indet Lt Brown	42	0	103	145
Indet Lt Gray	7	0	15	22
Indet Misc.	0	7	12	19
Indet Mottled	37	0	12	49
Indet Trans	0	0	1	1
Indet White	9	0	11	20
Subtotal	*102*	*7*	*184*	*293*
Total	**116**	**7**	**195**	**318**

Table H-296. Lithic Tools, AU2, 41CV481.

Lithic Material	Tool Type: Chopper Type A	edge modified	finished biface	utilized	Total
06-HL Tan	0	1	0	1	2
08-FH Yellow	0	0	0	1	1
15-Gry/Brn/Grn	0	1	0	1	2
Indet Lt Brown	1	0	1	0	2
Indet Misc.	0	0	0	2	2
Total	**1**	**2**	**1**	**5**	**9**

Table H-297. Faunal Recovery, AU2, 41CV481.

	Element						
Taxon	Astragalus	Indeterminate	Long bone, unident.	Rib	Scapula	left	Total
Vertebrates							
Artiodactyls (med)	1	0	0	0	0	-	1
Mammal (med/lg)	0	0	5	0	0	-	5
Mammal (lg/vlg)	0	5	12	6	1	-	24
Vertebrate-undiffer.	0	2	0	0	0	-	2
Total	1	7	17	6	1	-	32
Bivalves							
Tritigonia verrucosa	-	-	-	-	-	1	1

Table H-298. Debitage Recovery by Size and Material Type, AU3, 41CV481.

	Size (cm)					
Lithic Material	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Identified Types						
06-HL Tan	0	0	0	0	1	1
08-FH Yellow	0	1	2	1	2	6
09-HL Tr Brown		0	0	0	1	1
14-FH Gray	0	0	1	1	0	2
15-Gry/Brn/Grn	0	5	1	2	0	8
Subtotal	*0*	*6*	*4*	*4*	*4*	*18*
Unidentified Types						
Indet Dk Brown	0	0	1	0	0	1
Indet Dk Gray	1	1	1	0	2	5
Indet Lt Brown	0	6	18	3	3	30
Indet Lt Gray	0	3	4	0	0	7
Indet Misc.	2	2	4	3	0	11
Indet Mottled	0	2	5	3	1	11
Indet White	1	3	3	2	2	11
Subtotal	*4*	*17*	*36*	*11*	*8*	*76*
Total	4	23	40	15	12	94

Table H-299. Binomial Statistic Results, AU3, 41CV481.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
06-HL Tan	1	less	expected
08-FH Yellow	6	less	expected
09-HL Tr Brown	1	less	expected
14-FH Gray	2	less	expected
15-Gry/Brn/Grn	8	less	more
Total Indet	76	more	more

1. Expected minimum = 9; expected maximum = 23.
2. Expected minimum = 1; expected maximum = 7.

Table H-300. Debitage Cortex Characteristics by Material Type, AU3, 41CV481

Lithic Material	Partial Cortex	Indeterminate	No Cortex	Total
Identified Types				
06-HL Tan	0	0	1	1
08-FH Yellow	0	0	6	6
09-HL Tr Brown	0	0	1	1
14-FH Gray	1	0	1	2
15-Gry/Brn/Grn	2	0	6	8
Subtotal	*3*	*0*	*15*	*18*
Unidentified Types				
Indet Dk Brown	0	0	1	1
Indet Dk Gray	0	0	5	5
Indet Lt Brown	5	1	24	30
Indet Lt Gray	2	0	5	7
Indet Misc.	0	0	11	11
Indet Mottled	7	0	4	11
Indet White	3	0	8	11
Subtotal	*17*	*1*	*58*	*76*
Total	20	1	73	94

Table H-301. Faunal Recovery, AU3, 41CV481.

Taxon	Element: Indeterminate	Long bone, unident.	Metatarsal	Radius	Total
Vertebrates					
Antilocapra americana	0	0	0	1	1
Artiodactyls (med)	0	0	1	0	1
Mammal (med/lg)	3	0	0	0	3
Mammal (lg/vlg)	2	7	0	0	9
Vertebrate-undiffer.	1	0	0	0	1
Total	6	7	1	1	15

Table H-302. Debitage Recovery by Size and Material Type, AU3, 41CV481.

Lithic Material	Size (cm): 0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Identified Types						
02-C White	0	0	0	1	0	1
03-AM Gray	0	0	0	3	0	3
08-FH Yellow	0	1	0	0	0	1
15-Gry/Brn/Grn	0	1	1	0	0	2
17-Owl Crk Black	0	0	1	0	0	1
Subtotal	*0*	*2*	*2*	*4*	*0*	*8*
Unidentified Types						
Indet Dk Brown	0	1	6	1	0	8
Indet Dk Gray	0	0	2	1	1	4
Indet Lt Brown	1	3	2	3	4	13
Indet Lt Gray	1	0	2	3	0	6
Indet Misc.	0	0	1	0	0	1
Indet Mottled	1	5	3	1	2	12
Indet White	0	1	5	2	3	11
Subtotal	*3*	*10*	*21*	*11*	*10*	*55*
Total	3	12	23	15	10	63

Table H-303. Binomial Statistic Results, AU4, 41CV481.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
02-C White	1	less	expected
03-AM Gray	3	less	expected
08-FH Yellow	1	less	expected
15-Gry/Brn/Grn	2	less	expected
17-Owl Crk Black	1	less	expected
Total Indet	55	more	na

1. Expected minimum = 5; expected maximum = 16.

2. Expected minimum = 0; expected maximum = 4.

Table H-304. Debitage Cortex Characteristics by Material Type, AU4, 41CV481.

Lithic Material	Partial Cortex	Indeterminate	No Cortex	Total
Identified Types				
02-C White	0	0	1	1
03-AM Gray	3	0	0	3
08-FH Yellow	0	0	1	1
15-Gry/Brn/Grn	0	0	2	2
17-Owl Crk Black	0	0	1	1
Subtotal	*3*	*0*	*5*	*8*
Unidentified Types				
Indet Dk Brown	0	0	8	8
Indet Dk Gray	1	0	3	4
Indet Lt Brown	4	1	8	13
Indet Lt Gray	5	0	1	6
Indet Misc.	0	0	1	1
Indet Mottled	3	0	9	12
Indet White	0	0	11	11
Subtotal	*13*	*1*	*41*	*55*
Total	16	1	46	63

Table H-305. Lithic Tools, AU4, 41CV481.

	Tool Type				
Lithic Material	edge modified	finished biface	spokeshave	utilized	Total
06-HL Tan	1	0	0	0	1
Indet Dk Brown	0	0	1	0	1
Indet Dk Gray	0	1	0	0	1
Indet Lt Brown	0	0	0	1	1
Indet Mottled	0	0	1	0	1
Total	**1**	**1**	**2**	**1**	**5**

Table H-306. Faunal Recovery, AU4, 41CV481.

	Element			
Taxon	Long bone, unident.	Tooth	Vertebra	Total
Vertebrates				
Mammal (medium)	1	0	0	1
Mammal (lg/vlg)	8	0	1	9
Odocoileus sp.	0	1	0	1
Total	**9**	**1**	**1**	**11**

Table H-308. Binomial Statistic Results, AU5, 41CV481.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
01-HL Blue(I)	1	less	expected
02-C White	3	less	expected
06-HL Tan	4	less	expected
08-FH Yellow	4	less	expected
09-HL Tr Brown	1	less	expected
14-FH Gray	3	less	expected
15-Gry/Brn/Grn	8	less	more
17-Owl Crk Black	3	less	expected
Total Indet	221	more	na

1. Expected minimum = 18; expected maximum =37.

2. Expected minimum = 0; expected maximum = 7.

Table H-307. Debitage Recovery by Size and Material Type, AU5, 41CV381.

	Size (cm)					
Lithic Material	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Identified Types						
01-HL Blue(I)	0	0	0	1	0	1
02-C White	0	0	0	2	1	3
06-HL Tan	0	0	1	3	0	4
08-FH Yellow	0	1	2	1	0	4
09-HL Tr Brown	0	0	0	1	0	1
14-FH Gray	0	0	1	2	0	3
15-Gry/Brn/Grn	0	2	2	4	0	8
17-Owl Crk Black	0	0	1	2	0	3
Subtotal	*0*	*3*	*7*	*16*	*1*	*27*
Unidentified Types						
Indet Black	0	1	0	0	0	1
Indet Dk Brown	1	6	0	1	0	8
Indet Dk Gray	7	3	1	0	0	11
Indet Lt Brown	8	18	16	18	5	65
Indet Lt Gray	1	6	3	0	0	10
Indet Misc.	6	17	10	6	0	39
Indet Mottled	3	4	9	6	7	29
Indet Trans	0	4	1	0	0	5
Indet White	6	9	18	14	6	53
Subtotal	*32*	*68*	*58*	*45*	*18*	*221*
Total	**32**	**71**	**65**	**61**	**19**	**248**

Table H-309. Debitage Cortex Characteristics by Material Type, AU5, 41CV481.

Lithic Material	Partial Cortex	Indeterminate	No Cortex	Total
Identified Types				
01-HL Blue(l)	0	0	1	1
02-C White	1	0	2	3
06-HL Tan	3	0	1	4
08-FH Yellow	2	1	1	4
09-HL Tr Brown	1	0	0	1
14-FH Gray	0	0	3	3
15-Gry/Brn/Grn	1	0	7	8
17-Owl Crk Black	1	0	2	3
Subtotal	*9*	*1*	*17*	*27*
Unidentified Types				
Indet Black	0	0	1	1
Indet Dk Brown	0	0	8	8
Indet Dk Gray	0	0	11	11
Indet Lt Brown	12	1	52	65
Indet Lt Gray	2	0	8	10
Indet Misc.	3	0	36	39
Indet Mottled	17	1	11	29
Indet Trans	1	0	4	5
Indet White	10	1	42	53
Subtotal	*45*	*3*	*173*	*221*
Total	**54**	**4**	**190**	**248**

Table H-310. Projectile Points, AU5, 41CV481.

	Point Type			
Lithic Material	Marshall	Montell	Other Arrow	Total
06-HL Tan	1	0	0	1
09-HL Tr Brown	0	1	0	1
Indet Lt Brown	0	0	1	1
Total	**1**	**1**	**1**	**3**

Table H-311. Lithic Tools, AU5, 41CV481.

	Tool Type				
Lithic Material	edge modified	late stage biface	spokeshave	utilized	Total
06-HL Tan	0	0	0	1	1
08-FH Yellow	1	0	0	0	1
19-C Dr Gray	0	1	0	0	1
Indet Dk Brown	0	1	0	0	1
Indet Lt Brown	0	0	1	0	1
Indet Lt Gray	1	0	0	0	1
Indet Misc.	1	0	0	0	1
Indet Mottled	0	0	0	1	1
Total	**3**	**2**	**1**	**2**	**8**

Table H-312. Faunal Recovery, AU5, 41CV481.

	Element				
Taxon	Indeterminate	Long bone, unident.	Tooth	left	Total
Vertebrates					
Mammal (sm/med)	0	1	0	-	1
Mammal (med/lg)	0	1	0	-	1
Mammal (lg/vlg)	42	4	1	-	47
Mammal (unk. size)	1	0	0	-	1
Vertebrate-undiffer.	2	0	0	-	2
Total	**45**	**6**	**1**	**-**	**52**
Bivalves					
Amblema plicata	-	-	-	1	1

Table H-313. Debitage Recovery by Size and Material Type, AU1, 41CV495.

Lithic Material	Size (cm) 0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Identified Types						
08-FH Yellow	0	0	1	0	0	1
14-FH Gray	0	0	1	0	0	1
Subtotal	*0*	*0*	*2*	*0*	*0*	*2*
Unidentified Types						
Indet Black	0	3	3	0	0	6
Indet Dk Gray	1	11	4	0	0	16
Indet Lt Brown	20	16	15	3	1	55
Indet Lt Gray	1	4	0	3	1	9
Indet Misc.	0	0	1	2	0	3
Indet Mottled	0	0	2	0	0	2
Indet White	0	1	0	1	0	2
Subtotal	*22*	*35*	*25*	*9*	*2*	*93*
Total	**22**	**35**	**27**	**9**	**2**	**95**

Table H-314. Binomial Statistic Results, AU1, 41CV495.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
08-FH Yellow	1	less	expected
14-FH Gray	1	less	expected
Total Indet	93	more	na

1. Expected minimum = 22; expected maximum = 40.
2. Expected minimum = 0; expected maximum = 2.

Table H-315. Debitage Cortex Characteristics by Material Type, AU1, 41CV495.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
08-FH Yellow	1	0	1
14-FH Gray	0	1	1
Subtotal	*1*	*1*	*2*
Unidentified Types			
Indet Black	0	6	6
Indet Dk Gray	0	16	16
Indet Lt Brown	10	45	55
Indet Lt Gray	3	6	9
Indet Misc.	0	3	3
Indet Mottled	0	2	2
Indet White	0	2	2
Subtotal	*13*	*80*	*93*
Total	**14**	**81**	**95**

Table H-316. Debitage Recovery by Size and Material Type, AU2, 41CV495.

Lithic Material	Size (cm) 0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	Total
Identified Types				
06-HL Tan	1	0	0	1
Unidentified Types				
Indet Lt Brown	1	0	0	1
Indet Misc.	1	0	0	1
Indet White	1	1	1	3
Subtotal	*3*	*1*	*1*	*5*
Total	**4**	**1**	**1**	**6**

Table H-317. Debitage Cortex Characteristics by Material Type, AU2, 41CV495.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
06-HL Tan	0	1	1
Unidentified Types			
Indet Lt Brown	1	0	1
Indet Misc.	0	1	1
Indet White	1	2	3
Subtotal	*2*	*3*	*5*
Total	**2**	**4**	**6**

Table H-318. Debitage Recovery by Size and Material Type, AU1, 41CV582.

	Size (cm)					
Lithic Material	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Identified Types						
03-AM Gray	0	1	1	0	0	2
06-HL Tan	0	1	1	3	1	6
08-FH Yellow	0	0	1	1	0	2
14-FH Gray	2	0	3	0	0	5
Subtotal	*2*	*2*	*6*	*4*	*1*	*15*
Unidentified Types						
Indet Black	0	0	0	1	0	1
Indet Dk Gray	0	1	0	0	0	1
Indet Lt Brown	0	1	1	0	0	2
Indet Lt Gray	0	0	0	1	0	1
Indet Mottled	0	0	2	0	0	2
Indet White	1	1	0	0	0	2
Subtotal	*1*	*3*	*3*	*2*	*0*	*9*
Total	**3**	**5**	**9**	**6**	**1**	**24**

Table H-319. Binomial Statistic Results, AU1, 41CV582.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
03-AM Gray	2	expected	expected
06-HL Tan	6	expected	expected
08-FH Yellow	2	expected	expected
14-FH Gray	5	expected	expected
Total Indet	9	expected	na

1. Expected minimum = 22; expected maximum = 40.

2. Expected minimum = 0; expected maximum = 2.

Table H-320. Debitage Cortex Characteristics by Material Type, AU1, 41CV582.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
03-AM Gray	1	1	2
06-HL Tan	2	4	6
08-FH Yellow	1	1	2
14-FH Gray	1	4	5
Subtotal	*5*	*10*	*15*
Unidentified Types			
Indet Black	1	0	1
Indet Dk Gray	0	1	1
Indet Lt Brown	1	1	2
Indet Lt Gray	0	1	1
Indet Mottled	2	0	2
Indet White	0	2	2
Subtotal	*4*	*5*	*9*
Total	**9**	**15**	**24**

Table H-321. Faunal Recovery, AU1, 41CV582.

	Symmetry			
Bivalves	left	right	unknown	Total
Amblema plicata	1	1	0	2
Indeterminate/unknown	0	0	1	1
Unionacea	2	0	0	2
Total	3	1	1	5

Table H-322. Debitage Recovery by Size and Material Type, AU1, 41CV900.

Lithic Material	Size (cm) 0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Identified Types						
02-C White	0	0	0	1	0	1
06-HL Tan	0	0	0	6	0	6
08-FH Yellow	0	0	3	1	1	5
15-Gry/Brn/Grn	0	0	0	1	0	1
Subtotal	*0*	*0*	*3*	*9*	*1*	*13*
Unidentified Types						
Indet Lt Brown	2	2	6	7	1	18
Indet Lt Gray	0	0	0	1	0	1
Indet Mottled	0	1	4	4	2	11
Indet White	0	1	3	2	0	6
Subtotal	*2*	*4*	*13*	*14*	*3*	*36*
Total	**2**	**4**	**16**	**23**	**4**	**49**

Table H-323. Binomial Statistic Results, AU1, 41CV900.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
02-C White	1	less	expected
06-HL Tan	6	expected	expected
08-FH Yellow	5	expected	expected
15-Gry/Brn/Grn	1	less	expected
Total Indet	36	more	na

1. Expected minimum = 5; expected maximum = 16.
2. Expected minimum = 1; expected maximum = 6.

Table H-324. Debitage Cortex Characteristics by Material Type, AU1, 41CV900.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
02-C White	0	1	1
06-HL Tan	1	5	6
08-FH Yellow	2	3	5
15-Gry/Brn/Grn	0	1	1
Subtotal	*3*	*10*	*13*
Unidentified Types			
Indet Lt Brown	3	15	18
Indet Lt Gray	0	1	1
Indet Mottled	3	8	11
Indet White	0	6	6
Subtotal	*6*	*30*	*36*
Total	**9**	**40**	**49**

Table H-325. Debitage Recovery by Size and Material Type, AU1, 41CV905.

Lithic Material	Size (cm) 0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Identified Types						
06-HL Tan	2	6	4	4	4	20
08-FH Yellow	0	17	22	29	19	87
14-FH Gray	0	1	0	0	0	1
15-Gry/Brn/Grn	0	0	1	2	7	10
Subtotal	*2*	*24*	*27*	*35*	*30*	*118*
Unidentified Types						
Indet Dk Brown	1	0	0	0	0	1
Indet Lt Brown	5	5	1	2	1	14
Indet Lt Gray	0	0	4	2	1	7
Indet Misc.	0	0	1	1	0	2
Subtotal	*6*	*5*	*6*	*5*	*2*	*24*
Total	**8**	**29**	**33**	**40**	**32**	**142**

Table H-326. Binomial Statistic Results, AU1, 41CV905.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
06-HL Tan	20	expected	expected
08-FH Yellow	87	more	more
14-FH Gray	1	less	less
15-Gry/Brn/Grn	10	less	less
Total Indet	24	expected	na

1. Expected minimum = 19; expected maximum = 38.
2. Expected minimum = 20; expected maximum = 39.

Table H-327. Debitage Cortex Characteristics by Material Type, AU1, 41CV905.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
06-HL Tan	7	13	20
08-FH Yellow	42	45	87
14-FH Gray	0	1	1
15-Gry/Brn/Grn	10	0	10
Subtotal	*59*	*59*	*118*
Unidentified Types			
Indet Dk Brown	0	1	1
Indet Lt Brown	2	12	14
Indet Lt Gray	2	5	7
Indet Misc.	1	1	2
Subtotal	*5*	*19*	*24*
Total	**64**	**78**	**142**

Table H-328. Projectile Points, AU1, 41CV905.

	Tool Type			
Lithic Material	early stage biface	late stage biface	utilized	Total
06-HL Tan	0	0	1	1
08-FH Yellow	0	0	1	1
15-Gry/Brn/Grn	1	1	0	2
Total	**1**	**1**	**2**	**4**

Table H-329. Debitage Recovery by Size and Material Type, AU2, 41CV905.

	Size (cm)							
Lithic Material	< 0.5	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Identified Types								
03-AM Gray	0	0	0	0	0	1	0	1
06-HL Tan	0	0	1	12	11	5	0	29
08-FH Yellow	0	9	45	50	63	29	0	196
09-HL Tr Brown	0	0	0	1	0	1	0	2
14-FH Gray	0	0	0	1	1	2	0	4
15-Gry/Brn/Grn	0	0	3	3	10	8	1	25
17-Owl Crk Black	0	1	1	0	1	0	0	3
22-C Mott/Flecks	0	0	0	0	0	1	0	1
Subtotal	*0*	*10*	*50*	*67*	*86*	*47*	*1*	*261*
Unidentified Types								
Indet Dk Brown	0	0	1	1	3	0	0	5
Indet Dk Gray	2	2	1	0	2	0	0	7
Indet Lt Brown	5	32	48	29	13	3	0	130
Indet Lt Gray	8	4	1	22	2	0	0	37
Indet Misc.	7	47	48	50	14	1	0	167
Indet Mottled	0	0	2	0	1	2	0	5
Indet Trans	0	0	1	1	0	0	0	2
Indet White	0	0	2	4	0	0	0	6
Subtotal	*22*	*85*	*104*	*107*	*35*	*6*	*0*	*359*
Total	**22**	**95**	**154**	**174**	**121**	**53**	**1**	**620**

Table H-330. Binomial Statistic Results, AU2, 41CV905.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
03-AM Gray	1	less	less
06-HL Tan	29	less	expected
08-FH Yellow	196	more	more
09-HL Tr Brown	2	less	less
14-FH Gray	4	less	less
15-Gry/Brn/Grn	25	less	expected
17-Owl Crk Black	3	less	less
22-C Mott/Flecks	1	less	less
Total Indet	359	more	na

1. Expected minimum = 53; expected maximum = 84.
2. Expected minimum = 22; expected maximum = 43.

Table H-331. Debitage Cortex Characteristics by Material Type, AU2, 41CV905.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
03-AM Gray	0	1	1
06-HL Tan	15	14	29
08-FH Yellow	82	114	196
09-HL Tr Brown	1	1	2
14-FH Gray	2	2	4
15-Gry/Brn/Grn	18	7	25
17-Owl Crk Black	1	2	3
22-C Mott/Flecks	1	0	1
Subtotal	*120*	*141*	*261*
Unidentified Types			
Indet Dk Brown	1	4	5
Indet Dk Gray	2	5	7
Indet Lt Brown	35	95	130
Indet Lt Gray	15	22	37
Indet Misc.	53	114	167
Indet Mottled	2	3	5
Indet Trans	0	2	2
Indet White	1	5	6
Subtotal	*109*	*250*	*359*
Total	**229**	**391**	**620**

Table H-332. Lithic Tools, AU2, 41CV905.

	Core Type		Tool Type						
Lithic Material	multiple platform	tested cobble	edge modified	finished biface	late stage biface	mano	side scraper	utilized	Total
06-HL Tan	0	0	2	0	0	0	0	0	2
08-FH Yellow	1	0	0	0	0	0	0	2	3
09-HL Tr Brown	0	0	0	0	0	0	1	0	1
22-CMtt/Flecks	0	1	0	0	0	0	0	0	1
Indet Dk Brown	0	0	0	0	0	0	0	1	1
Indet Lt Brown	0	0	0	1	1	0	0	1	3
Indet Lt Gray	0	0	0	1	0	0	0	0	1
Indet Mttled	0	0	0	0	0	0	1	0	1
Quartzite	0	0	0	0	0	1	0	0	1
Total	1	1	2	2	1	1	2	4	14

Table H-333. Faunal Recovery, AU2, 41CV905.

	Element				
Taxon	Indeterminate	Long bone, unident.	Tooth	right	Total
Vertebrates					
Mammal (sm/med)	2	1	0	-	3
Mammal (lg/vlg)	2	3	0	-	5
Sylvilagus sp.	0	0	1	-	1
Vertebrate-undiffer.	1	0	0	-	1
Total	5	4	1	-	10
Bivalves					
Lampsilis sp.	-	-	-	1	1

Table H-334. Debitage Recovery by Size and Material Type, AU1, 41CV918.

	Size (cm)					
Lithic Material	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Identified Types						
01-HL Blue(l)	0	0	0	1	0	1
06-HL Tan	0	1	4	1	3	9
14-FH Gray	0	0	0	0	1	1
15-Gry/Brn/Grn	0	0	1	1	0	2
Subtotal	*0*	*1*	*5*	*3*	*4*	*13*
Unidentified Types						
Indet Dk Brown	0	1	0	0	0	1
Indet Dk Gray	0	0	1	0	0	1
Indet Lt Brown	0	1	2	0	0	3
Indet Misc.	4	1	5	0	0	10
Indet Mottled	0	0	0	1	0	1
Indet White	0	0	0	1	0	1
Subtotal	*4*	*3*	*8*	*2*	*0*	*17*
Total	4	4	13	5	4	30

Table H-335. Binomial Statistic Results, AU1, 41CV918.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
01-HL Blue(l)	1	less	expected
06-HL Tan	9	expected	more
14-FH Gray	1	less	expected
15-Gry/Brn/Grn	2	expected	expected
Total Indet	17	more	na

1. Expected minimum = 2; expected maximum = 11.
2. Expected minimum = 1; expected maximum = 6.

Table H-336. Debitage Cortex Characteristics by Material Type, AU1, 41CV918.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
01-HL Blue(l)	0	1	1
06-HL Tan	5	4	9
14-FH Gray	1	0	1
15-Gry/Brn/Grn	1	1	2
Subtotal	*7*	*6*	*13*
Unidentified Types			
Indet Dk Brown	0	1	1
Indet Dk Gray	1	0	1
Indet Lt Brown	2	1	3
Indet Misc.	2	8	10
Indet Mottled	1	0	1
Indet White	0	1	1
Subtotal	*6*	*11*	*17*
Total	**13**	**17**	**30**

Table H-337. Faunal Recovery, AU1, 41CV918.

Taxon	Element				
	Indeterminate	Long bone, unident.	Phalange	Rib	Total
Vertebrates					
Artiodactyls (med)	0	0	1	1	2
Mammal (med/lg)	0	1	0	0	1
Vertebrate-undiffer.	2	0	0	0	2
Total	**2**	**1**	**1**	**1**	**5**

Table H-338. Debitage Recovery by Size and Material Type, AU1, 41CV935.

Lithic Material	Size (cm)						
	< 0.5	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Identified Types							
01-HL Blue(l)	0	0	0	3	0	2	5
06-HL Tan	0	5	2	8	6	1	22
08-FH Yellow	0	6	15	5	4	0	30
15-Gry/Brn/Grn	0	0	11	1	0	0	12
17-Owl Crk Black	0	0	0	1	0	0	1
27-C Novaculite	0	0	0	0	0	1	1
Subtotal	*0*	*11*	*28*	*18*	*10*	*4*	*71*
Unidentified Types							
Indet Black	0	0	9	2	0	0	11
Indet Dk Brown	0	6	11	8	0	0	25
Indet Dk Gray	29	67	76	16	0	1	189
Indet Lt Brown	33	121	92	18	6	4	274
Indet Lt Gray	5	12	0	0	0	0	17
Indet Misc.	228	121	83	151	33	15	631
Indet Mottled	0	35	11	2	8	7	63
Indet Trans	0	0	0	2	0	0	2
Indet White	0	13	4	1	1	2	21
Subtotal	*295*	*375*	*286*	*200*	*48*	*29*	*1233*
Total	**295**	**386**	**314**	**218**	**58**	**33**	**1304**

Table H-339. Binomial Statistic Results, AU1, 41CV935.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
01-HL Blue(l)	5	less	less
06-HL Tan	22	less	more
08-FH Yellow	30	less	more
15-Gry/Brn/Grn	12	less	expected
17-Owl Crk Black	1	less	less
27-C Novaculite	1	less	less
Total Indet	1233	more	na

1. Expected minimum = 162; expected maximum 211.
2. Expected minimum = 6; expected maximum 18.

Table H-340. Debitage Cortex Characteristics by Material Type, AU1, 41CV935.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
01-HL Blue(l)	0	5	5
06-HL Tan	2	20	22
08-FH Yellow	3	27	30
15-Gry/Brn/Grn	2	10	12
17-Owl Crk Black	1	0	1
27-C Novaculite	1	0	1
Subtotal	*9*	*62*	*71*
Unidentified Types			
Indet Black	0	11	11
Indet Dk Brown	0	25	25
Indet Dk Gray	2	187	189
Indet Lt Brown	14	260	274
Indet Lt Gray	0	17	17
Indet Misc.	91	540	631
Indet Mottled	15	48	63
Indet Trans	0	2	2
Indet White	5	16	21
Subtotal	*127*	*1106*	*1233*
Total	**136**	**1168**	**1304**

Table H-341. Projectile Points, AU1, 41CV935.

	Point Type					
Lithic Material	Bonham	Other Arrow	Other Dart	Scallorn	Young	Total
06-HL Tan	0	0	0	1	0	1
17-Owl Crk Black	0	0	0	1	0	1
Indet Dk Gray	0	1	1	0	0	2
Indet Lt Brown	0	0	1	0	0	1
Indet Misc.	1	0	0	1	0	2
Indet Mottled	0	0	0	0	1	1
Total	**1**	**1**	**2**	**3**	**1**	**8**

Table H-342. Lithic Tools, AU1, 41CV935.

	Tool Type						
Lithic Material	drill	edge modified	finished biface	graver	middle stage biface	utilized	Total
06-HL Tan	1	1	1	0	1	0	4
17-Owl Crk Black	0	0	0	0	0	1	1
19-C Dr Gray	0	0	0	0	0	1	1
Indet Dk Brown	0	1	0	0	0	0	1
Indet Lt Brown	0	0	0	1	0	2	3
Indet Misc.	0	0	0	0	1	1	2
Indet Mottled	0	0	0	0	0	2	2
Indet White	0	0	0	0	0	1	1
Total	**1**	**2**	**1**	**1**	**2**	**8**	**15**

Table H-343. Debitage Recovery by Size and Material Type, AU1, 41CV936.

	Size (cm)						
Lithic Material	<0.5	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Identified Types							
01-HL Blue(l)	0	0	3	1	1	0	5
02-C White	0	0	0	0	0	2	2
03-AM Gray	0	0	0	3	0	0	3
06-HL Tan	0	9	7	4	0	0	20
07-Foss Pale Brown	0	0	0	0	0	1	1
08-FH Yellow	9	19	12	3	0	0	43
09-HL Tr Brown	0	0	0	1	0	2	3
14-FH Gray	0	0	1	2	1	1	5
15-Gry/Brn/Grn	0	0	0	2	0	0	2
Subtotal	*9*	*28*	*23*	*16*	*2*	*6*	*84*
Unidentified Types							
Indet Dk Brown	0	15	0	0	0	0	15
Indet Dk Gray	6	24	27	0	0	0	57
Indet Lt Brown	0	59	19	10	0	1	89
Indet Lt Gray	0	0	15	3	0	0	18
Indet Misc.	7	10	24	14	1	1	57
Indet Mottled	0	0	5	5	5	1	16
Indet Trans	0	0	0	1	0	0	1
Indet White	0	12	14	9	1	1	37
Subtotal	*13*	*120*	*104*	*42*	*7*	*4*	*290*
Total	**22**	**148**	**127**	**58**	**9**	**10**	**374**

Table H-344. Binomial Statistic Results, AU1, 41CV936.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
01-HL Blue(l)	5	less	expected
02-C White	2	less	less
03-AM Gray	3	less	less
06-HL Tan	20	less	more
07-Foss Pale Brown	1	less	less
08-FH Yellow	43	expected	more
09-HL Tr Brown	3	less	less
14-FH Gray	5	less	expected
15-Gry/Brn/Grn	2	less	less
Total Indet	290	more	na

1. Expected minimum = 26; expected maximum 49.
2. Expected minimum = 4; expected maximum 15.

Table H-345. Debitage Cortex Characteristics by Material Type, AU1, 41CV936.

Lithic Material	Partial Cortex	Indeterminate	No Cortex	Total
Identified Types				
01-HL Blue(l)	0	0	5	5
02-C White	1	0	1	2
03-AM Gray	0	0	3	3
06-HL Tan	0	0	20	20
07-Foss Pale Brown	0	1	0	1
08-FH Yellow	6	0	37	43
09-HL Tr Brown	3	0	0	3
14-FH Gray	2	0	3	5
15-Gry/Brn/Grn	0	0	2	2
Subtotal	*12*	*1*	*71*	*84*
Unidentified Types				
Indet Dk Brown	0	0	15	15
Indet Dk Gray	10	0	47	57
Indet Lt Brown	4	0	85	89
Indet Lt Gray	1	0	17	18
Indet Misc.	13	2	42	57
Indet Mottled	11	0	5	16
Indet Trans	0	0	1	1
Indet White	5	0	32	37
Subtotal	*44*	*2*	*244*	*290*
Total	**56**	**3**	**315**	**374**

Table H-346. Projectile Points, AU1, 41CV936.

	Point Type		
Lithic Material	Other Arrow	Other Dart	Total
Indet Black	1	0	1
Indet Dk Brown	0	1	1
Indet Dk Gray	1	0	1
Indet Lt Brown	1	0	1
Total	**3**	**1**	**4**

Table H-347. Lithic Tools, AU1, 41CV936.

	Tool Type				
Lithic Material	Chopper Type B	edge modified	late stage biface	utilized	Total
06-HL Tan	0	0	1	0	1
18-C Mottled	1	0	0	1	2
Indet Dk Brown	0	0	0	1	1
Indet Misc.	0	1	0	0	1
Indet Mottled	0	0	0	1	1
Indet White	0	0	0	3	3
Total	**1**	**1**	**1**	**6**	**9**

Table H-348. Faunal Recovery, AU1, 41CV936.

	Symmetry		
Bivalves	left	right	Total
Toxolasma sp.	0	1	1
Toxolasma texanensis	1	2	3
Unionacea	0	1	1
Total	**1**	**4**	**5**

Table H-349. Debitage Recovery by Size and Material Type, AU1, 41CV1033.

Lithic Material	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
	Size (cm)					
Identified Types						
02-C White	0	0	2	0	0	2
06-HL Tan	0	0	1	0	0	1
10-HL Blue	0	0	1	0	0	1
Subtotal	*0*	*0*	*4*	*0*	*0*	*4*
Unidentified Types						
Indet Dk Gray	0	0	1	0	0	1
Indet Lt Brown	1	2	1	3	1	8
Indet Lt Gray	0	0	1	0	0	1
Indet Mottled	0	0	1	1	1	3
Indet White	1	1	0	0	0	2
Subtotal	*2*	*3*	*4*	*4*	*2*	*15*
Total	**2**	**3**	**8**	**4**	**2**	**19**

Table H-350. Debitage Cortex Characteristics by Material Type, AU1, 41CV1033.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
02-C White	1	1	2
06-HL Tan	0	1	1
10-HL Blue	0	1	1
Subtotal	*1*	*3*	*4*
Unidentified Types			
Indet Dk Gray	0	1	1
Indet Lt Brown	0	8	8
Indet Lt Gray	1	0	1
Indet Mottled	2	1	3
Indet White	0	2	2
Subtotal	*3*	*12*	*15*
Total	**4**	**15**	**19**

Table H-351. Debitage Recovery by Size and Material Type, AU1, 41CV1080.

Lithic Material	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
	Size (cm)						
Identified Types							
02-C White	0	0	0	1	0	0	1
03-AM Gray	2	0	1	1	0	0	4
06-HL Tan	0	1	0	1	2	0	4
08-FH Yellow	3	2	6	2	1	1	15
14-FH Gray	0	0	1	0	0	0	1
17-Owl Crk Black	1	0	0	0	0	0	1
18-C Mottled	0	0	0	0	1	0	1
Subtotal	*6*	*3*	*8*	*5*	*4*	*1*	*27*
Unidentified Types							
Indet Dk Gray	0	2	1	1	0	0	4
Indet Lt Brown	3	12	4	7	1	0	27
Indet Lt Gray	4	0	1	0	0	0	5
Indet Misc.	3	6	1	0	0	0	10
Indet Mottled	0	0	3	2	2	0	7
Indet White	0	2	4	0	2	0	8
Subtotal	*10*	*22*	*14*	*10*	*5*	*0*	*61*
Total	**16**	**25**	**22**	**15**	**9**	**1**	**88**

Table H-352. Binomial Statistic Results, AU1, 41CV1080.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
02-C White	1	less	expected
03-AM Gray	4	less	expected
06-HL Tan	4	less	expected
08-FH Yellow	15	expected	more
14-FH Gray	1	less	expected
17-Owl Crk Black	1	less	expected
18-C Mottled	1	less	expected
Total Indet	61	more	na

1. Expected minimum = 5; expected maximum 17.
2. Expected minimum = 1; expected maximum 8.

Table H-353. Debitage Cortex Characteristics by Material Type, AU1, 41CV1080.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
02-C White	0	1	1
03-AM Gray	0	4	4
06-HL Tan	0	4	4
08-FH Yellow	0	15	15
14-FH Gray	0	1	1
17-Owl Crk Black	0	1	1
18-C Mottled	0	1	1
Subtotal	*0*	*27*	*27*
Unidentified Types			
Indet Dk Gray	0	4	4
Indet Lt Brown	6	21	27
Indet Lt Gray	1	4	5
Indet Misc.	1	9	10
Indet Mottled	5	2	7
Indet White	3	5	8
Subtotal	*16*	*45*	*61*
Total	**16**	**72**	**88**

Table H-354. Debitage Recovery by Size and Material Type, AU2, 41CV1080.

	Size (cm)						
Lithic Material	<0.5	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Identified Types							
02-C White	0	3	1	3	0	0	7
03-AM Gray	0	0	0	0	1	2	3
06-HL Tan	0	0	0	0	4	3	7
08-FH Yellow	0	5	3	4	4	0	16
15-Gry/Brn/Grn	0	0	0	3	0	0	3
17-Owl Crk Black	0	0	0	1	0	0	1
18-C Mottled	0	0	0	17	1	0	18
19-C Dr Gray	0	0	0	2	1	0	3
22-C Mott/Flecks	0	0	0	0	0	1	1
Subtotal	*0*	*8*	*4*	*30*	*11*	*6*	*59*
Unidentified Types							
Indet Dk Brown	0	0	5	0	1	0	6
Indet Dk Gray	2	21	20	11	2	1	57
Indet Lt Brown	49	128	79	38	19	3	316
Indet Lt Gray	0	0	1	7	6	8	22
Indet Misc.	9	2	46	27	1	0	85
Indet Mottled	4	0	5	10	3	8	30
Indet Trans	0	0	0	1	0	0	1
Indet White	6	13	18	8	5	4	54
Subtotal	*70*	*164*	*174*	*102*	*37*	*24*	*571*
Total	**70**	**172**	**178**	**132**	**48**	**30**	**630**

Table H-355. Binomial Statistic Results, AU2, 41CV1080.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
02-C White	7	less	expected
03-AM Gray	3	less	expected
06-HL Tan	7	less	expected
08-FH Yellow	16	less	more
15-Gry/Brn/Grn	3	less	expected
17-Owl Crk Black	1	less	less
18-C Mottled	18	less	more
19-C Dr Gray	3	less	expected
22-C Mott/Flecks	1	less	less
Total Indet	571	more	na

1. Expected minimum = 48; expected maximum 78.

2. Expected minimum = 2; expected maximum 12.

Table H-356. Debitage Cortex Characteristics by Material Type, AU2, 41CV1080.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
02-C White	0	7	7
03-AM Gray	0	3	3
06-HL Tan	1	6	7
08-FH Yellow	2	14	16
15-Gry/Brn/Grn	0	3	3
17-Owl Crk Black	0	1	1
18-C Mottled	0	18	18
19-C Dr Gray	1	2	3
22-C Mott/Flecks	1	0	1
Subtotal	*5*	*54*	*59*
Unidentified Types			
Indet Dk Brown	5	1	6
Indet Dk Gray	9	48	57
Indet Lt Brown	55	261	316
Indet Lt Gray	18	4	22
Indet Misc.	24	61	85
Indet Mottled	27	3	30
Indet Trans	1	0	1
Indet White	7	47	54
Subtotal	*146*	*425*	*571*
Total	**151**	**479**	**630**

Table H-357. Projectile Points, AU2, 41CV1080.

	Point Type			
Lithic Material	Fresno	Other Arrow	Scallorn	Total
06-HL Tan	0	0	1	1
08-FH Yellow	0	1	0	1
Indet Dk Brown	1	0	0	1
Indet Dk Gray	0	0	1	1
Indet Lt Brown	0	1	1	2
Indet Misc.	1	0	1	2
Total	**2**	**2**	**4**	**8**

Table H-358. Lithic Tools, AU2, 41CV1080.

	Tool Type							
Lithic Material	Clear Fork Type B	drill	edge modified	finished biface	late stage biface	middle stage biface	utilized	Total
06-HL Tan	1	0	1	0	0	0	1	3
08-FH Yellow	0	0	0	0	0	1	0	1
Indet Dk Brown	0	0	0	0	1	0	0	1
Indet Lt Brown	0	1	0	0	0	0	0	1
Indet White	0	0	0	1	0	0	0	1
Total	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**7**

Table H-359. Faunal Recovery, AU2, 41CV1080.

Taxon	Element: Atlas	Axis	Calcaneus	Carapace	Caudal vertebra	Cranium	Dermal armor	Humerus	Indeterminate	Long bone, unident.	Mandible	Maxilla	Metapodial	Metatarsal	Pelvis	Phalange	Plastron	Radius	Rib	Scapula	Tibia	Tooth	Ulna	Vertebra	left	right	Total
Vertebrates																											
Antilocapra americana	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	-	-	2
Artiodactyls (med)	0	0	0	0	0	2	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	-	-	5
Aves (2-medium)	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	1
Bos/Bison	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	-	-	1
Carnivora	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	-	-	1
Dasypus novemcinctus	0	0	0	0	0	0	6	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	-	-	7
Didelphis virgiania	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	3	2	-	-	10
Emydidae	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	1
Leporidae	0	1	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	2	0	0	1	2	0	0	-	-	10
Mammal (small)	0	0	0	0	0	0	0	0	3	6	0	0	0	0	0	0	0	0	1	0	0	0	0	0	-	-	10
Mammal (sm/med)	1	0	1	0	4	11	0	0	23	29	1	0	2	0	1	3	0	0	7	0	0	0	0	13	-	-	96
Mammal (medium)	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	1
Mammal (med/lg)	0	0	0	0	0	0	0	0	16	24	0	0	0	0	0	0	0	0	0	0	0	0	0	1	-	-	41
Mammal (lg/vlg)	0	0	0	0	0	0	0	0	8	62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	70
Mammal (very lg)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	-	-	4
Mammal (unk. size)	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	12
Mephitis mephitis	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	1
Neotoma sp.	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	1
Rodent (sm/med)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	3	0	0	-	-	6
Rodent (medium)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	-	-	1
Serpentes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	-	-	3
Sigmodon sp.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	-	-	1
Sylvilagus sp.	0	0	2	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	1	0	0	-	-	6
Testudinata	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	-	-	3
Vertebrate-undiffer.	0	0	0	0	0	0	0	0	28	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	32
Total	1	1	3	2	4	13	6	2	90	131	2	3	3	2	4	3	2	2	12	2	3	13	3	19	-	-	326
Bivalves																											
Amblema plicata	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2

Table H-360. Debitage Recovery by Size and Material Type, AU2, 41CV1129.

Lithic Material	< 0.5	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
	Size (cm)							
Identified Types								
01-HL Blue(l)	0	0	0	0	1	0	0	1
06-HL Tan	0	0	0	3	0	0	0	3
09-HL Tr Brown	0	0	0	0	0	1	0	1
14-FH Gray	0	0	0	1	2	0	0	3
15-Gry/Brn/Grn	0	0	0	1	0	0	0	1
17-Owl Crk Black	0	0	0	2	1	0	0	3
18-C Mottled	0	0	0	0	8	4	1	13
19-C Dr Gray	0	0	2	2	1	2	0	7
22-C Mott/Flecks	0	0	0	0	5	0	0	5
23-C Mott/Banded	0	0	0	3	0	2	0	5
Subtotal	*0*	*0*	*2*	*12*	*18*	*9*	*1*	*42*
Unidentified Types								
Indet Black	0	0	0	3	0	1	0	4
Indet Dk Brown	1	1	0	0	0	0	0	2
Indet Dk Gray	3	2	3	4	0	0	0	12
Indet Lt Brown	0	10	6	5	7	3	0	31
Indet Lt Gray	0	0	0	0	3	0	0	3
Indet Misc.	0	1	5	2	0	0	0	8
Indet Mottled	0	0	0	8	0	3	0	11
Indet Trans	0	0	1	0	0	0	0	1
Indet White	0	0	1	1	0	0	0	2
Subtotal	*4*	*14*	*16*	*23*	*10*	*7*	*0*	*74*
Total	**4**	**14**	**18**	**35**	**28**	**16**	**1**	**116**

Table H-361. Binomial Statistic Results, AU2, 41CV1129.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
01-HL Blue(l)	1	less	expected
06-HL Tan	3	less	expected
09-HL Tr Brown	1	less	expected
14-FH Gray	3	less	expected
15-Gry/Brn/Grn	1	less	expected
17-Owl Crk Black	3	less	expected
18-C Mottled	13	expected	more
19-C Dr Gray	7	expected	expected
22-C Mott/Flecks	5	expected	expected
23-C Mott/Banded	5	expected	expected
Total Indet	74	more	na

1. Expected minimum = 4; expected maximum 17.
2. Expected minimum = 1; expected maximum 8.

Table H-362. Debitage Cortex Characteristics by Material Type, AU2, 41CV1129.

Lithic Material	All Cortex	Partial Cortex	Indeterminate	No Cortex	Total
Identified Types					
01-HL Blue(l)	0	0	0	1	1
06-HL Tan	0	0	0	3	3
09-HL Tr Brown	0	1	0	0	1
14-FH Gray	0	0	0	3	3
15-Gry/Brn/Grn	0	1	0	0	1
17-Owl Crk Black	0	1	0	2	3
18-C Mottled	0	12	0	1	13
19-C Dr Gray	0	3	0	4	7
22-C Mott/Flecks	0	1	0	4	5
23-C Mott/Banded	0	0	0	5	5
Subtotal	*0*	*19*	*0*	*23*	*42*
Unidentified Types					
Indet Black	0	1	0	3	4
Indet Dk Brown	0	1	0	1	2
Indet Dk Gray	0	1	0	11	12
Indet Lt Brown	0	13	3	15	31
Indet Lt Gray	0	1	0	2	3
Indet Misc.	4	1	0	3	8
Indet Mottled	0	9	0	2	11
Indet Trans	0	0	0	1	1
Indet White	0	0	0	2	2
Subtotal	*4*	*27*	*3*	*40*	*74*
Total	**4**	**46**	**3**	**63**	**116**

Table H-363. Lithic Tools, AU2, 41CV1129.

	Tool Type				
Lithic Material	drill	finished biface	late stage biface	utilized	Total
06-HL Tan	1	0	0	0	1
14-FH Gray	0	1	0	0	1
15-Gry/Brn/Grn	0	0	1	0	1
22-C Mott/Flecks	0	1	0	0	1
Indet Mottled	0	0	0	1	1
Total	1	2	1	1	5

Table H-364. Faunal Recovery, AU2, 41CV1129.

	Element									
Taxon	Carapace	Indeterminate	Long bone, unident.	Metapodial	Rib	Vertebra	left	right	unknown	Total
Vertebrates										
Artiodactyls (med)	0	0	0	1	0	1	-	-	-	2
Mammal (small)	0	1	0	0	0	0	-	-	-	1
Mammal (medium)	0	0	3	0	0	0	-	-	-	3
Mammal (med/lg)	0	10	2	0	0	0	-	-	-	12
Mammal (lg/vlg)	0	10	7	0	1	0	-	-	-	18
Testudinata	1	0	0	0	0	0	-	-	-	1
Total	1	21	12	1	1	1	-	-	-	37
Bivalves										
Amblema plicata	-	-	-	-	-	-	1	1	0	2
Lampsilis sp.	-	-	-	-	-	-	1	0	0	1
Lamsilis hydiana	-	-	-	-	-	-	2	1	0	3
Potamilus purpuratus	-	-	-	-	-	-	0	1	0	1
Tritigonia verrucosa	-	-	-	-	-	-	0	0	1	1
Unionacea	-	-	-	-	-	-	0	1	0	1
Total	-	-	-	-	-	-	4	4	1	9

Table H-365. Debitage Recovery by Size and Material Type, AU3, 41CV1129.

Lithic Material	Size (cm.) 0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Identified Types							
01-HL Blue(l)	0	0	1	0	0	0	1
06-HL Tan	0	0	0	0	6	0	6
08-FH Yellow	0	1	1	0	1	0	3
18-C Mottled	0	0	0	2	0	1	3
19-C Dr Gray	0	0	1	0	0	0	1
22-C Mott/Flecks	0	0	0	3	2	0	5
23-C Mott/Banded	0	0	0	0	1	0	1
Subtotal	*0*	*1*	*3*	*5*	*10*	*1*	*20*
Unidentified Types							
Indet Black	0	0	1	0	0	0	1
Indet Dk Brown	0	1	0	2	0	0	3
Indet Dk Gray	0	1	1	2	0	0	4
Indet Lt Brown	3	11	12	7	2	0	35
Indet Lt Gray	0	2	0	0	1	0	3
Indet Misc.	2	3	2	1	0	0	8
Indet Mottled	0	0	4	3	0	0	7
Indet Trans	1	0	0	3	2	0	6
Indet White	0	3	0	0	0	0	3
Subtotal	*6*	*21*	*20*	*18*	*5*	*0*	*70*
Total	**6**	**22**	**23**	**23**	**15**	**1**	**90**

Table H-366. Binomial Statistic Results, AU3, 41CV1129.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
01-HL Blue(l)	1	less	expected
06-HL Tan	6	expected	expected
08-FH Yellow	3	less	expected
18-C Mottled	3	less	expected
19-C Dr Gray	1	less	expected
22-C Mott/Flecks	5	expected	expected
23-C Mott/Banded	1	less	expected
Total Indet	70	more	na

1. Expected minimum = 5; expected maximum 17.

2. Expected minimum = 0; expected maximum 6.

Table H-367. Debitage Cortex Characteristics by Material Type, AU3, 41CV1129.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
01-HL Blue(l)	0	1	1
06-HL Tan	6	0	6
08-FH Yellow	1	2	3
18-C Mottled	1	2	3
19-C Dr Gray	0	1	1
22-C Mott/Flecks	4	1	5
23-C Mott/Banded	1	0	1
Subtotal	*13*	*7*	*20*
Unidentified Types			
Indet Black	1	0	1
Indet Dk Brown	1	2	3
Indet Dk Gray	3	1	4
Indet Lt Brown	10	25	35
Indet Lt Gray	0	3	3
Indet Misc.	5	3	8
Indet Mottled	7	0	7
Indet Trans	1	5	6
Indet White	1	2	3
Subtotal	*29*	*41*	*70*
Total	**42**	**48**	**90**

Table H-368. Faunal Recovery, AU3, 41CV1129.

	Element				
Taxon	Astragalus	Indeterminate	Long bone, unident.	left	Total
Vertebrates					
Artiodactyls (med)	1	0	0	-	1
Mammal (small)	0	0	2	-	2
Mammal (med/lg)	0	1	0	-	1
Mammal (lg/vlg)	0	0	10	-	10
Vertebrate-undiffer.	0	4	0	-	4
Total	**1**	**5**	**12**	**-**	**18**
Bivalves					
Amblema plicata	-	-	-	4	4
Toxolasma texanensis	-	-	-	1	1
Total	**-**	**-**	**-**	**5**	**5**

Table H-369. Debitage Recovery by Size and Material Type, AU1, 41CV1165.

	Size (cm)					
Lithic Material	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Identified Types						
06-HL Tan	0	0	1	0	0	1
Unidentified Types						
Indet Dk Brown	0	0	0	1	0	1
Indet Dk Gray	0	1	0	0	1	2
Indet Lt Brown	1	0	0	0	2	3
Indet Lt Gray	0	0	1	1	0	2
Indet Misc.	1	2	1	0	0	4
Indet Mottled	0	0	0	1	0	1
Subtotal	*2*	*3*	*2*	*3*	*3*	*13*
Total	**2**	**3**	**3**	**3**	**3**	**14**

Table H-370. Binomial Statistic Results, AU1, 41CV1165.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
06-HL Tan	1	less	expected
Total Indet	13	more	na

1. Expected minimum = 3; expected maximum 11.
2. Expected minimum = 1; expected maximum 1.

Table H-371. Debitage Cortex Characteristics by Material Type, AU1, 41CV1165.

Lithic Material	All Cortex	Partial Cortex	No Cortex	Total
Identified Types				
06-HL Tan	0	0	1	1
Unidentified Types				
Indet Dk Brown	0	0	1	1
Indet Dk Gray	1	0	1	2
Indet Lt Brown	1	1	1	3
Indet Lt Gray	0	0	2	2
Indet Misc.	0	0	4	4
Indet Mottled	0	1	0	1
Subtotal	*2*	*2*	*9*	*13*
Total	**2**	**2**	**10**	**14**

Table H-372. Debitage Recovery by Size and Material Type, AU1, 41CV1166.

Lithic Material	Size (cm) 0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	Total
Identified Types					
14-FH Gray	0	0	1	0	1
17-Owl Crk Black	0	1	0	0	1
Subtotal	*0*	*1*	*1*	*0*	*2*
Unidentified Types					
Indet Dk Gray	14	1	0	0	15
Indet Lt Brown	23	1	13	0	37
Indet Lt Gray	0	0	1	0	1
Indet Misc.	22	0	5	0	27
Indet Mottled	2	1	7	4	14
Indet White	1	2	3	1	7
Subtotal	*62*	*5*	*29*	*5*	*101*
Total	**62**	**6**	**30**	**5**	**103**

Table H-373. Binomial Statistic Results, AU1, 41CV1166.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
14-FH Gray	1	less	less
17-Owl Crk Black	1	less	less
Total Indet	101	more	na

1. Expected minimum = 25; expected maximum 43.
2. Expected minimum = 0; expected maximum 2.

Table H-374. Debitage Cortex Characteristics by Material Type, AU1, 41CV1166.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
14-FH Gray	0	1	1
17-Owl Crk Black	0	1	1
Subtotal	*0*	*2*	*2*
Unidentified Types			
Indet Dk Gray	2	13	15
Indet Lt Brown	3	34	37
Indet Lt Gray	1	0	1
Indet Misc.	1	26	27
Indet Mottled	3	11	14
Indet White	3	4	7
Subtotal	*13*	*88*	*101*
Total	**13**	**90**	**103**

Table H-375. Debitage Recovery by Size and Material Type, AU2, 41CV1166.

Lithic Material	Size (cm) <0.5	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Identified Types							
06-HL Tan	0	0	0	3	3	2	8
08-FH Yellow	0	2	0	0	1	0	3
17-Owl Crk Black	0	0	1	0	0	0	1
19-C Dr Gray	0	0	0	0	0	1	1
22-C Mott/Flecks	0	11	0	1	0	0	12
Subtotal	*0*	*13*	*1*	*4*	*4*	*3*	*25*
Unidentified Types							
Indet Black	0	0	0	1	0	0	1
Indet Dk Brown	0	0	28	0	1	0	29
Indet Dk Gray	0	42	6	3	0	0	51
Indet Lt Brown	8	19	17	4	4	1	53
Indet Lt Gray	0	3	3	2	0	0	8
Indet Misc.	5	14	12	4	3	0	38
Indet Mottled	0	4	0	7	4	0	15
Indet Trans	0	0	1	1	0	0	2
Indet White	0	0	0	6	0	0	6
Subtotal	*13*	*82*	*67*	*28*	*12*	*1*	*203*
Total	**13**	**95**	**68**	**32**	**16**	**4**	**228**

Table H-376. Binomial Statistic Results, AU2, 41CV1166.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
06-HL Tan	8	less	expected
08-FH Yellow	3	less	expected
17-Owl Crk Black	1	less	expected
19-C Dr Gray	1	less	expected
22-C Mott/Flecks	12	less	more
Total Indet	203	more	na

1. Expected minimum = 27; expected maximum 49.

2. Expected minimum = 1; expected maximum 9.

Table H-377. Debitage Cortex Characteristics by Material Type, AU2, 41CV1166.

Lithic Material	Partial Cortex	Indeterminate	No Cortex	Total
Identified Types				
06-HL Tan	0	0	8	8
08-FH Yellow	0	0	3	3
17-Owl Crk Black	0	0	1	1
19-C Dr Gray	1	0	0	1
22-C Mott/Flecks	1	0	11	12
Subtotal	*2*	*0*	*23*	*25*
Unidentified Types				
Indet Black	0	0	1	1
Indet Dk Brown	0	0	29	29
Indet Dk Gray	0	0	51	51
Indet Lt Brown	27	0	26	53
Indet Lt Gray	0	0	8	8
Indet Misc.	11	3	24	38
Indet Mottled	2	0	13	15
Indet Trans	1	0	1	2
Indet White	1	0	5	6
Subtotal	*42*	*3*	*158*	*203*
Total	**44**	**3**	**181**	**228**

Table H-378. Debitage Recovery by Size and Material Type, AU3, 41CV1166.

	Size (cm)				
Lithic Material	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Unidentified Types					
Indet Dk Brown	1	1	0	0	2
Indet Lt Brown	3	0	0	0	3
Indet Lt Gray	0	0	1	0	1
Indet Mottled	0	0	0	1	1
Indet White	0	0	1	1	2
Total	**4**	**1**	**2**	**2**	**9**

Table H-379. Debitage Cortex Characteristics by Material Type, AU3, 41CV1166.

Lithic Material	Partial Cortex	No Cortex	Total
Unidentified Types			
Indet Dk Brown	0	2	2
Indet Lt Brown	0	3	3
Indet Lt Gray	0	1	1
Indet Mottled	0	1	1
Indet White	1	1	2
Total	**1**	**8**	**9**

Table H-380. Debitage Recovery by Size and Material Type, AU1, 41CV1378.

	Size (cm)					
Lithic Material	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Unidentified Types						
Indet Dk Gray	1	0	0	0	0	1
Indet Lt Brown	1	0	1	0	1	3
Indet Lt Gray	0	1	0	1	0	2
Indet Mottled	0	0	0	0	1	1
Total	**2**	**1**	**1**	**1**	**2**	**7**

Table H-381. Debitage Cortex Characteristics by Material Type, AU1, 41CV1378.

Lithic Material	No Cortex	Total
Unidentified Types		
Indet Dk Gray	1	1
Indet Lt Brown	3	3
Indet Lt Gray	2	2
Indet Mottled	1	1
Total	7	7

Table H-382. Debitage Recovery by Size and Material Type, AU2, 41CV1378.

	Size (cm)		
Lithic Material	0.9 - 1.2	1.2 - 1.8	Total
Unidentified Types			
Indet Dk Gray	0	1	1
Indet Lt Brown	1	3	4
Total	1	4	5

Table H-383. Debitage Cortex Characteristics by Material Type, AU2, 41CV1378.

Lithic Material	Partial Cortex	No Cortex	Total
Unidentified Types			
Indet Dk G .y	1	0	1
Indet Lt Brown	1	3	4
Total	2	3	5

Table H-384. Debitage Recovery by Size and Material Type, AU1, 41CV1403.

	Size (cm)					
Lithic Material	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Identified Types						
02-C White	0	3	0	0	0	3
Unidentified Types						
Indet Dk Brown	0	2	0	2	0	4
Indet Dk Gray	0	1	3	0	0	4
Indet Lt Brown	2	4	9	3	1	19
Indet Lt Gray	5	3	2	2	0	12
Indet Mottled	0	0	1	0	0	1
Indet White	0	7	2	0	2	11
Subtotal	*7*	*17*	*17*	*7*	*3*	*51*
Total	7	20	17	7	3	54

Table H-385. Binomial Statistic Results, AU1, 41CV1403.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
02-C White	3	less	expected
Total Indet	51	more	na

1. Expected minimum = 20; expected maximum = 34.
2. Expected minimum = 0; expected maximum = 3.

Table H-386. Debitage Cortex Characteristics by Material Type, AU1, 41CV1403.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
02-C White	0	3	3
Unidentified Types			
Indet Dk Brown	0	4	4
Indet Dk Gray	1	3	4
Indet Lt Brown	2	17	19
Indet Lt Gray	0	12	12
Indet Mottled	0	1	1
Indet White	0	11	11
Subtotal	*3*	*48*	*51*
Total	3	51	54

Table H-387. Lithic Tools, AU1, 41CV1403.

	Tool Type			
Lithic Material	edge modified	middle stage biface	utilized	Total
06-HL Tan	0	0	1	1
Indet Mottled	0	1	1	2
Indet White	1	0	0	1
Total	**1**	**1**	**2**	**4**

Table H-388. Debitage Recovery by Size and Material Type, AU2, 41CV1403.

	Size (cm)					
Lithic Material	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	Total
Identified Types						
02-C White	0	0	0	1	0	1
15-Gry/Brn/Grn	0	1	0	0	0	1
Subtotal	*0*	*1*	*0*	*1*	*0*	*2*
Unidentified Types						
Indet Dk Brown	0	0	0	1	0	1
Indet Dk Gray	1	6	3	[illegible]	[illegible]	11
Indet Lt Brown	0	4	6	[illegible]	[illegible]	14
Indet Lt Gray	0	2	1	0	0	3
Indet Misc.	1	0	0	0	0	1
Indet Mottled	0	0	0	0	1	1
Indet White	1	0	0	2	0	3
Subtotal	*3*	*12*	*10*	*7*	*2*	*34*
Total	**3**	**13**	**10**	**8**	**2**	**36**

Table H-389. Binomial Statistic Results, AU2, 41CV1403.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
02-C White	1	less	expected
15-Gry/Brn/Grn	1	less	expected
Total Indet	34	more	na

1. Expected minimum = 6; expected maximum = 17.
2. Expected minimum = 0; expected maximum = 2.

Table H-390. Debitage Cortex Characteristics by Material Type, AU2, 41CV1403.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
02-C White	0	1	1
15-Gry/Brn/Grn	0	1	1
Subtotal	*0*	*2*	*2*
Unidentified Types			
Indet Dk Brown	0	1	1
Indet Dk Gray	0	11	11
Indet Lt Brown	5	9	14
Indet Lt Gray	0	3	3
Indet Misc.	0	1	1
Indet Mottled	1	0	1
Indet White	0	3	3
Subtotal	*6*	*28*	*34*
Total	**6**	**30**	**36**

Table H-391. Debitage Recovery by Size and Material Type, AU1, 41CV1471.

Lithic Material	Size (cm) 0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Identified Types						
08-FH Yellow	1	2	3	4	2	12
14-FH Gray	0	1	1	0	0	2
15-Gry/Brn/Grn	1	3	0	1	1	6
17-Owl Crk Black	0	1	0	0	0	1
Subtotal	*2*	*7*	*4*	*5*	*3*	*21*
Unidentified Types						
Indet Dk Brown	1	1	0	0	0	2
Indet Dk Gray	1	0	0	0	0	1
Indet Lt Brown	4	8	13	4	0	29
Indet Lt Gray	0	1	1	0	0	2
Indet Misc.	1	1	0	0	0	2
Indet Mottled	0	1	0	4	0	5
Indet Trans	2	3	2	0	0	7
Indet White	0	0	0	1	0	1
Subtotal	*9*	*15*	*16*	*9*	*0*	*49*
Total	**11**	**22**	**20**	**14**	**3**	**70**

Table H-392. Binomial Statistic Results, AU1, 41CV1471.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
08-FH Yellow	12	expected	more
14-FH Gray	2	less	expected
15-Gry/Brn/Grn	6	less	expected
17-Owl Crk Black	1	less	less
Total Indet	49	more	na

1. Expected minimum = 7; expected maximum = 21.
2. Expected minimum = 2; expected maximum = 9.

Table H-393. Debitage Cortex Characteristics by Material Type, AU1, 41CV1471.

Lithic Material	Partial Cortex	No Cortex	Total
Identified Types			
08-FH Yellow	8	4	12
14-FH Gray	0	2	2
15-Gry/Brn/Grn	2	4	6
17-Owl Crk Black	0	1	1
Subtotal	*10*	*11*	*21*
Unidentified Types			
Indet Dk Brown	2	0	2
Indet Dk Gray	1	0	1
Indet Lt Brown	18	11	29
Indet Lt Gray	2	0	2
Indet Misc.	2	0	2
Indet Mottled	3	2	5
Indet Trans	1	6	7
Indet White	1	0	1
Subtotal	*30*	*19*	*49*
Total	**40**	**30**	**70**

Table H-394. Lithic Tools, AU1, 41CV1471.

Lithic Material	Tool Type graver	utilized	Total
08-FH Yellow	0	1	1
Indet Dk Brown	1	0	1
Indet Lt Brown	0	2	2
Indet Misc.	0	1	1
Total	**1**	**4**	**5**

Table H-395. Faunal Recovery, AU1, 41CV1471.

Taxon	Element: Metapodial	Element: left	Element: right	Total
Vertebrates				
Artiodactyls (med)	1	-	-	1
Bivalves				
Amblema plicata	-	0	1	1
Cyrtonalus sp.	-	1	0	1
Unionacea	-	4	0	4
Total	-	5	1	6

Table H-396. Debitage Recovery by Size and Material Type, AU2, 41CV1471.

Lithic Material	Size (cm): 0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	Total
Unidentified Types					
Indet Dk Brown	0	1	0	0	1
Indet Lt Brown	0	0	3	1	4
Indet Misc.	1	0	3	0	4
Indet Mottled	0	0	0	1	1
Indet Trans	0	0	1	0	1
Indet White	0	0	1	0	1
Total	1	1	8	2	12

Table H-397. Debitage Cortex Characteristics by Material Type, AU2, 41CV1471.

Lithic Material	Partial Cortex	No Cortex	Total
Unidentified Types			
Indet Dk Brown	0	1	1
Indet Lt Brown	2	2	4
Indet Misc.	4	0	4
Indet Mottled	1	0	1
Indet Trans	0	1	1
Indet White	1	0	1
Total	8	4	12

Table H-398. Debitage Recovery by Size and Material Type, AU1, 41CV1472.

Lithic Material	Size (cm): < 0.5	0.5 - 0.9	0.9 - 1.2	1.2 - 1.8	1.8 - 2.6	2.6 - 5.2	> 5.2	Total
Identified Types								
06-HL Tan	0	6	2	5	10	8	2	33
08-FH Yellow	0	5	52	156	87	65	4	369
10-HL Blue	0	0	0	0	1	0	0	1
14-FH Gray	0	0	9	7	16	1	0	33
15-Gry/Brn/Grn	0	1	4	35	23	11	2	76
17-Owl Crk Black	1	1	6	5	4	1	0	18
Subtotal	*1*	*13*	*73*	*208*	*141*	*86*	*8*	*530*
Unidentified Types								
Indet Black	0	0	1	1	0	0	0	2
Indet Dk Brown	0	7	30	25	2	3	1	68
Indet Dk Gray	0	3	13	16	9	2	0	43
Indet Lt Brown	7	11	32	66	25	9	1	151
Indet Lt Gray	0	7	6	13	13	8	0	47
Indet Misc.	0	1	10	16	8	2	0	37
Indet Mottled	0	0	7	8	5	2	0	22
Indet Trans	0	2	6	6	1	1	0	16
Indet White	0	0	2	2	3	1	0	8
Subtotal	*7*	*31*	*107*	*153*	*66*	*28*	*2*	*394*
Total	8	44	180	361	207	114	10	924

Table H-399. Binomial Statistic Results, AU1, 41CV1472.

Lithic Material	N	Including Indeterminates[1]	Excluding Indeterminates[2]
06-HL Tan	33	less	less
08-FH Yellow	369	more	more
10-HL Blue	1	less	less
14-FH Gray	33	less	less
15-Gry/Brn/Grn	76	less	expected
17-Owl Crk Black	18	less	less
Total Indet	394	more	na

1. Expected minimum = 111; expected maximum = 153.

2. Expected minimum = 72; expected maximum = 105.

Table H-400. Debitage Cortex Characteristics by Material Type, AU1 41CV1471.

Lithic Material	All Cortex	Partial Cortex	Indeterminate	No Cortex	Total
Identified Types					
06-HL Tan	0	7	1	25	33
08-FH Yellow	1	74	0	294	369
10-HL Blue	0	0	0	1	1
14-FH Gray	0	3	0	30	33
15-Gry/Brn/Grn	2	12	0	62	76
17-Owl Crk Black	0	0	0	18	18
Subtotal	*3*	*96*	*1*	*430*	*530*
Unidentified Types					
Indet Black	0	1	0	1	2
Indet Dk Brown	3	7	0	58	68
Indet Dk Gray	0	13	0	30	43
Indet Lt Brown	3	30	1	117	151
Indet Lt Gray	1	25	0	21	47
Indet Misc.	2	17	0	18	37
Indet Mottled	0	12	0	10	22
Indet Trans	0	3	0	13	16
Indet White	0	1	0	7	8
Subtotal	*9*	*109*	*1*	*275*	*394*
Total	**12**	**205**	**2**	**705**	**924**

Table H-401. Projectile Points, AU1, 41CV1472.

	Point Type				
Lithic Material	Bulverde	Edgewood	Ellis	Other Dart	Total
08-FH Yellow	0	0	1	2	3
14-FH Gray	0	1	0	0	1
Indet Lt Gray	1	0	0	0	1
Total	**1**	**1**	**1**	**2**	**5**

Table H-402. Lithic Tools, AU1, 41CV1472.

	Core Type		Tool Type									
Lithic Material	multiple platform	tested cobble	Chopper Type A	early stage biface	edge modified	finished biface	late stage biface	middle stage biface	other tool	side scraper	utilized	Total
06-HL Tan	1	0	0	1	1	0	1	1	0	1	1	7
07-Foss Pale Brown	0	0	0	0	1	0	0	0	0	0	0	1
08-FH Yellow	0	1	0	0	1	2	0	0	0	0	1	5
14-FH Gray	0	0	0	0	1	0	0	0	0	0	0	1
15-Gry/Brn/Grn	0	0	1	0	0	0	0	0	0	0	0	1
Indet Dk Brown	0	0	0	0	0	0	0	0	1	0	0	1
Indet Lt Brown	0	0	0	0	1	0	0	0	0	0	0	1
Indet Misc.	0	0	0	0	0	0	1	0	0	0	1	2
Indet Mottled	0	0	0	0	1	0	1	0	0	0	0	2
Total	**1**	**1**	**1**	**1**	**6**	**2**	**3**	**1**	**1**	**1**	**3**	**21**

Table H-403. Faunal Recovery, AU1, 41CV1472.

	Element												
Taxon	Astragalus	Carapace	Cranium	Indeterminate	Long bone, unident.	Mandible	Metapodial	Rib	Tooth	left	right	unknown	Total
Vertebrates													
Antilocapra americana	1	0	0	0	0	0	0	0	0	-	-	-	1
Artiodactyls (med)	0	0	0	0	0	1	1	0	0	-	-	-	2
Canis sp.	0	0	0	0	0	0	0	0	1	-	-	-	1
Carnivora	0	0	0	0	0	1	0	0	0	-	-	-	1
Leporidae	0	0	0	0	1	0	0	0	0	-	-	-	1
Mammal (sm/med)	0	0	0	0	4	0	0	0	0	-	-	-	4
Mammal (medium)	0	0	0	0	6	0	0	0	0	-	-	-	6
Mammal (med/lg)	0	0	1	6	17	0	0	3	0	-	-	-	27
Mammal (lg/vlg)	0	0	0	0	11	0	0	0	0	-	-	-	11
Mammal (unk. size)	0	0	0	6	0	0	0	0	0	-	-	-	6
Testudinata	0	1	0	0	0	0	0	0	0	-	-	-	1
Trionyx sp.	0	3	0	0	0	0	0	0	0	-	-	-	3
Vertebrate-undiffer.	0	0	0	14	0	0	0	0	0	-	-	-	14
Total	1	4	1	26	39	2	1	3	1	-	-	-	78
Bivalves													
Amblema plicata	-	-	-	-	-	-	-	-	-	3	3	0	6
Amblema sp.	-	-	-	-	-	-	-	-	-	1	2	0	3
Ambleminae	-	-	-	-	-	-	-	-	-	1	0	0	1
Indeterminate/unknown	-	-	-	-	-	-	-	-	-	0	0	2	2
Lampsilinae	-	-	-	-	-	-	-	-	-	0	3	0	3
Lampsilis sp.	-	-	-	-	-	-	-	-	-	1	0	0	1
Megalonaias nervosa	-	-	-	-	-	-	-	-	-	2	1	0	3
Potamilus purpuratus	-	-	-	-	-	-	-	-	-	0	1	0	1
Quadrula apiculata	-	-	-	-	-	-	-	-	-	4	0	0	4
Quadrula houstonensis	-	-	-	-	-	-	-	-	-	0	1	0	1
Quadrula sp.	-	-	-	-	-	-	-	-	-	2	1	0	3
Toxolasma sp.	-	-	-	-	-	-	-	-	-	1	0	0	1
Tritigonia verrucosa	-	-	-	-	-	-	-	-	-	2	3	0	5
Unionacea	-	-	-	-	-	-	-	-	-	12	10	38	60
Total	-	-	-	-	-	-	-	-	-	29	25	40	94